The Rules of Reading

I Will Read or Listen Like AudioBook On Phone or Other Technology The Rules of Reading All Parts, On Daily Basis And Apply The Steps of The Rules of Reading To Tasks, Deep Work, Deep Studies, Learning and Studies, Values, Personal Life, Professional Life, Reflect and Review Of Day, Journaling and Visualisation.

1. **Stop Doing Less Than Absolutely Your Best**
2. **Skim Book Before Make Decision if I Want To Proceed or Quit Bad Books: Great rule is 100 pages minus your Age.**
3. **Take Notes After 2nd Inspectional Reading.**
4. **Read Or Listen A Book Daily.**
5. **Never Speed Read The Book For Comprehension.**
6. **Spend lots of time reading or listening the book.**
7. **Read OR Listen Classical Book.**
8. **Study Foundation of The Topic in Order to Proceed To Advance Level.**
9. **Try To Apply The Book To Your Life. Point of Book not to look Smarter but do better in Life**

Brain Like Muscle, The Harder You Use, The Stronger it Becomes.

1. **Focus And Act On What You Can Control And Influence Instead Of What You Can't. Control What You Can And Do Not Worry About Things I Cannot Control.**

"*If You Don't Read Newspaper You are uninformed. If You Do Read It You Are Misinformed. What are the Responsibilities The Reporter Has? The Responsibility Of Reporter Is To Tell The Truth, Not Just To Be First, But To Tell The Truth. We Living In The Society, Where Just First Is Priority, who Cares, Just Get It Out There, Do Not Care Who Would It Hurts, Do Not Care Who Would Destroy, Do Not Care If It Is True, Just Say It And Sell It.*" ***Denzel Washington***

If you want your name to be remembered after your death, either do things worth writing, or write things worth reading."
- Benjamin Franklin.

If You Don't Produce You Won't Thrive – No Matter How Skilled Or Talented You Are. Human beings, it seems, are at their best when immersed deeply in something challenging. If you service low-impact activities, therefore, you're taking away time you could be spending on higher-impact activities.
Two Core Abilities for Thriving in the New Economy

1. ***The ability to quickly master hard things.***
2. ***The ability to produce at an elite level, in terms of both quality and speed.***

Cal Newport.

History Tend To Repeat Itself. Always Try To Understand Historical Facts From Both Sides And Build On That Understanding Further. This Helps To Look AT The History Holistically.

The Table of Content

Part 1: What Do Not Do For Deep Work, Deep Study and Bible Study

1. **Step 1-Reasons Do Not Read Generally The Newspaper On Daily Basis. Pages 17-18.**
2. **Step 2-Reasons Do Not Use Internet. Pages 19.**
3. **Step 3-Reasons Do Not Use TV and Youtube. Pages 20-21.**
4. **Step 4-NOT MULTITASK. Page 22.**

Part 2: Steps In Choosing Topic, Skimming The Books, Articles Debate, Discussion For Deep Work Or Deep Study Or Bible Study.

1. **Step 5-How To Become Polymath. Page 24.**
2. **Step 6-Choose The Topic. Pages 25-34.**
3. **Step 7-Three Questions to Ask Yourself Before Saying YES to a New Commitment. Pages 35.**
4. **Step 8-What Tools I Will Use For Learning? Page 36.**
5. **Step 9-Narrow Down Subject or Topic. Pages 37-38.**
6. **Step 10-Information Overload: Why we're facing it and how to handle it. Pages 39-40.**
7. **Step 11-Compile Resources And Create Curriculum. Page 41.**
8. **Step 12-Filter Resources. Pages 42.**
9. **Step 13-Choose A Book, Article, Talk, Discussion, Debate, Speeches, Research, Newspaper, Journal And Give The Reason of The Choice. Pages 43-45.**
10. **Step 14 Skimming: Intelligently Skimming Through The Book or Text. VERY FAST READING AND SKIMMING Pages 46-50.**
11. **Step 15- Find Out What Kind of Resource is this? Pages 51-52.**

Part 3-Rules of Reading for Entertainment and Basic Understanding For Deep Work, Or Deep Study, Or Bible Study.

1. **Step 16-Decide The Rules for Entertainment and Basic Understanding For Deep Work or Bible Study. Page 54.**
2. **Step 17-Dive In. Page 55.**
3. **Step 18-Use The Chosen Rules of Reading Method For Entertainment Or Basic Understanding and Follow Each Steps Of The Method Until Finish All Steps, And Follow Each Steps As many Times As I Want, While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step. Pages 56-73.**
    A. **VERY FAST READING- Entertainment.**
        I. **Method 1-Speed Reading. FAST Reading. Pages 58-63.**
    B. **FAST READING: Methods for Basic Knowledge For Deep Work or Bible Study.**
        I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**
        III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
        V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        VI. **Method 6-Devotional Bible Read. Pages 72-73.**

4. **Step 19-Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times. Page 74.**
5. **Step 20-Take Notes. Pages 75-90.**
    - **The Blank Sheet.**
    - **Conventional Notes.**
    - **Note Taking.**
    - **Cornell Note Taking.**
    - **Richard Feyman Note Taking Technique.**
    - **Flow Chart.**
    - **Cornel Note Taking 2.**
    - **Analytical Learners.**
    - **Sentence Method.**

- **SQ3R.**
- **Mapping.**
- **Smart Wisdom.**
- **Diagram and Processes.**
- **Charting.**
- **CERC**
- **Use Smart Notes**

6. **Step 21-Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times. Page 91.**
7. **Step 22-Basic Exploration, Experimentation and Practice. Page 92.**
8. **Step 23-Take Notes. Pages 93-108.**
    - **The Blank Sheet.**
    - **Conventional Notes.**
    - **Note Taking.**
    - **Cornell Note Taking.**
    - **Richard Feynman Note Taking Technique.**
    - **Flow Chart.**
    - **Cornel Note Taking 2.**
    - **Analytical Learners.**
    - **Sentence Method.**
    - **SQ3R.**
    - **Mapping.**
    - **Smart Wisdom.**
    - **Diagram and Processes.**
    - **Charting.**
    - **CERC**
    - **Use Smart Notes**

Part 4: Rules of Reading For Bible Study, Deep Work, Deep Study, Powerful Goodness.

1. **Step 24-Decide The Rules of Reading For Bible Study, Deep Work. Page 110.**
2. **Step 25. How Many Pages Read A DAY. Page 111.**
3. **Step 26-Do Not Speed Read. Page 112.**
4. **Step 27- Slow Down. Pages 113-115.**
5. **Step 28- Isolating Myself For Bible Study and Deep Work. Pages 116-118.**
6. **Step 29-Power of Concentration. Pages 119-123.**
7. **Step 30-You Have Required To Do The Work to Have an Opinion on Any Topic. Pages 124-139.**
8. **Step 31-Use The Chosen Rules of Reading Method For Bible Study, Deep Work, Deep Study. And Follow Each Steps Of The Method Until Finish All Steps, And Follow Each Steps As many Times As I Want, While Listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step. Pages 140-305.**
    - **A. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**
        - **IX. Method 9-Chapter Analysis Method. Pages 205-214.**
        - **X. Method 10-Paragraph Study. Pages 215-228.**
        - **XI. Method 11-Verse by Verse Analysis Method. Pages 229-233.**
        - **XII. Method 12-Book Synthesis Method. Pages 234-237.**
        - **XIII. Method 13-Theological Study Method of Bible Study. Pages 238-244.**
        - **XIV. Method 14-Studying Bible Prophecy. Pages 245-258.**
        - **XV. Method 15-Typological Study Method. Pages 259-261.**
        - **XVI. Method 16- John MacArthur Way Bible Study. Pages 262-267.**
        - **XVII. Method 17-Inductive Bible Study Method. Pages 268-295.**
        - **XVIII. Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**

XIX. Method 19-Theological Group of Principles. Pages 302-305.
XX. Method 20- How To Read A Book Pages 306.

Part 5: Rules of Reading For Deep Work, Deep Study, Bible Study.

1. Step 32-Decide The Rules of Reading For. Deep Work, Shallow Work, Bible Study Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method. Pages 307-308.
2. Step 33. How Many Pages Read A Day. Page 309.
3. Step 34-Do Not Speed Read. Pages 310.
4. Step 35- Slow Down. Pages 311-313.
5. Step 36- Isolating Myself For Bible Study AND Decide The Study or Work Philosophy. Pages 314-316.
6. Step 37-Power of Concentration. Pages 317-321.
7. Step 38-You Have Required To Do The Work to Have an Opinion on Any Topic. Pages 322-337.
8. Step 39-Use The Chosen Rules of Reading Method For More In-depth Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method. Use These Methods To Do Very DEEP Analysis of the Text or Topic Than Previous Methods. Follow Each Steps Of The Method Until Finish All Steps, And Follow Each Steps As many Times As I Want, While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step- VERY SLOW Reading- Complex Text. Pages 338-941.
    A. VERY SLOW READING- COMPLEX TEXT. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.
        I. Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.
        II. Method 22-How To Read A Book For Various Books. Pages 341-599.
        III. Method 23- Syntopicon Pages 600-641.
        IV. Method 24-The Craft of Research. Pages 642-881.
        V. Method 25-Research Books can Be Used. Pages 882-897.
        VI. Method 26-Investigative Journalism. Pages 898-923.
        VII. Method 27-Mixed Methods of Rules of Reading. Pages 924-943.

Part 6: Analysis Of Book By Using External Sources.

1. **Step 40-Aids To Reading, Listening, Conversation, Debate. Pages 944-957.**
2. **Step 41-Commentaries On Book and What Are Other Take on? Pages 958.**
3. **Step 42-Review Of The Book. Pages 959-962.**
4. **Step 43-Analysing Author and Publisher and Audience. Pages 963-966.**
5. **Step 44-How To Spot Bad Science. Pages 967-977.**
6. **Step 45-Content Of Critical Review. Pages 978-979.**
7. **Step 46-The Funding of Book, Author, Publisher, Speaker, Presenter, School, Government, Politician, Companies, Influencer, Newspaper, Journalist or Other Person. Pages 980-1017.**
8. **Step 47-Was There Propaganda and Conspiracy Theories In the Book and Propaganda Analysis. Pages 1018-1025.**
9. **Step 48-What did I take From the Book. Pages 1026-1031.**
10. **Step 49-Implication of The Book. Pages 1032.**
11. **Step 50-My Arguments For Or Against The Author, Writer, Speaker, Debater. Pages 1033-1035.**
12. **Step 51-Improve My Arguments and I would Have Another Chance, how would I Approach. Pages 1036-1037.**
13. **Step 52-Basic Exploration, Experimentation and Practice. Pages 1038.**
14. **Step 53-Note Taking. Pages 1039-1054.**
    - **The Blank Sheet**
    - **Conventional Notes**
    - **Note Taking**
    - **Cornell Note Taking**
    - **Richard Feyman Note Taking Technique**
    - **Flow Chart**
    - **Cornel Note Taking 2.**
    - **Analytical Learners.**
    - **Sentence Method.**
    - **SQ3R.**
    - **Mapping.**
    - **Smart Wisdom.**
    - **Diagram and Processes.**
    - **Charting.**
    - **CERC**

- **Use Smart Notes**

15. **Step 54-Simplify The Topic For Myself First. Pages 1055.**
16. **Step 55-Reflect, Refine And Simplify. Pages 1056.**
17. **Step 56-Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge. Pages 1057-1059.**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1061-1063.**
2. **Step 58- NOT MULTITASK. Pages 1064.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1065-1080.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1081-1083.**
5. **Step 61-Intradisciplinary Thinking. Pages 1084-1125.**
6. **Step 62-Multidisciplinary Thinking. Pages 1126-1168.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1169-1211.**
8. **Step 64-Interdisciplinary Thinking. Pages 1212-1254.**
9. **Step 65-Transdisciplinary Thinking. Pages 1255-1298.**
10. **Step 66-Journaling. Pages 1299.**
11. **Step 67-Letting The World Do The Work For You. Pages 1300-1305.**
12. **Step 68-Journaling. Pages 1306.**
13. **Step 69-Letting The World Do The Work For You. Pages 1307-1312.**

Part 8: Simplify Explanation and Creating Analogies.

1. **Step 70-Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive. Pages 1314.**

Part 9:Reflect, Refine and Simplify.

1. **Step 71-Reflect, Refine, and Simplify. Page 1316.**

Part 10:Organise And Review.

1. **Step 72-Organise And Review. Pages 1318.**

Part 11:Deep Work and Application.

1. **Step 73- The Focus to Say No. Pages 1320.**
2. **Step 74-Half Life.The Decay of Knowledge and What to Do About It. Pages 1321-1329.**
3. **Step 75-Power of I do not know. Pages 1330.**
4. **Step 76-Application. Pages 1331-1339.**
5. **Step 77-Letting The World Do The Work For You. Pages 1340-1345.**

Part 12: Deep Work and Decision Making.

1. **Step 78- Slow Down. Pages 1347-1349.**
2. **Step 79-NOT MULTITASK. Pages 1350.**
3. **Step 80-You Have Required To Do The Work For Decision Making. Pages 1351-1366.**
4. **Step 81- Use Rules of Reading for Decision Making 1367-1368.**
5. **Step 82-Decision Making Books. Pages 1369.**
6. **Step 83-Decision Making. Pages 1370-1407.**
7. **Step 84- Thinking, Logic and Mental Model. Pages 1408.**
8. **Step 85-Letting The World Do The Work For You. Pages 1409-1414.**
9. **Step 86-Journaling. Pages 1415.**
10. **Step 87-Letting The World Do The Work For You. Pages 1416-1421.**

Part 13:Deep Work and Communication.

1. **Step 88- Slow Down. Pages 1423-1425.**
2. **Step 89-NOT MULTITASK. Pages 1426.**
3. **Step 90-You Have Required To Do The Work For Communication. Pages 1427-1442.**
4. **Step 91- Use Rules of Reading For Communication. Pages 1443-1444.**
5. **Step 92-Communication Books. Pages 1445-1448.**
6. **Step 93- Thinking, Logic and Mental Model. Pages 1449.**
7. **Step 94-Letting The World Do The Work For You. Pages 1450-1455.**

Part 14:Deep Work and Teach.

1. **Step 95- Slow Down. Pages 1457-1459.**
2. **Step 96-NOT MULTITASK. Pages 1460.**
3. **Step 97-You Have Required To Do The Work For Teaching. Pages 1461-1476.**
4. **Step 98- Use Rules of Reading For Teaching. Pages 1477-1478.**

5. **Step 99-Teaching Books. Pages 1479-1480.**
6. **Step 100- Thinking, Logic and Mental Model. Pages 1481.**
7. **Step 101-Teach. Pages 1482-1483.**
8. **Step 102-Letting The World Do The Work For You. Pages 1484-1489.**

Part 15:Deep Work and Writing.

1. **Step 103- Slow Down. Page 1491-1493.**
2. **Step 104-NOT MULTITASK. Pages 1494.**
3. **Step 105-You Have Required To Do The Work For Writing. Pages 1495-1510.**
4. **Step 106- Use Rules of Reading to Analyse The Topic For Writing. Pages 1511-1512.**
5. **Step 107-Writing Books. Pages 1513-1517.**
6. **Step 108- How To Become Straight A Student. Pages 1518-1590..**
7. **Step 109- Thinking, Logic and Mental Model. Pages 1591.**
8. **Step 110-Letting The World Do The Work For You. Pages 1592-1597.**

Part 16:Deep Work, Shallow Work, Strategy and Tactics.

1. **Step 111- Slow Down. Page 1599-1601.**
2. **Step 112-NOT MULTITASK. Pages 1602.**
3. **Step 113-You Have Required To Do The Work For Strategy and Tactics. Pages 1603-1618.**
4. **Step 114- Use Rules of Reading to Analyse The Topic For Strategy and Tactics. Pages 1619-1620.**
5. **Step 115-Strategy and Tactic Books. Pages 1621-1622.**
6. **Step 116-A Primer on Strategy. Pages 1623-1626.**
7. **Step 117-Strategy vs. Tactics: Why the Difference Matters. Pages 1629-1632.**
8. **Step 118-Thinking, Logic and Mental Model. Pages 1633.**
9. **Step 119- Tiny Gains. Massive Results. Pages 1634-1635.**
10. **Step 120-Letting The World Do The Work For You. Pages 1636-1641.**

Part 17:Leadership And Accountability.

1. **Step 121- Slow Down. Pages 1643-1645.**
2. **Step 122-NOT MULTITASK. Pages 1646.**
3. **Step 123-The Work Required To Do For Leadership. Pages 1647-1662.**

4. **Step 124- Use Rules of Reading to Analyse The Topic For Leadership. Pages 1663-1664.**
5. **Step 125-Leadership and Accountability Books. Pages 1665-1666.**
6. **Step 126-Thinking, Logic and Mental Model. Pages 1667.**
7. **Step 127-Leaders and Followers, Planners and Doers. Pages 1668-1670.**
8. **Step 128-Letting The World Do The Work For You. Pages 1671-1676.**

Part 18: Finance, Economics and Investment.

1. **Step 129-Investment Books. Pages 1678-1679.**
2. **Step 130-An Investment Approach That Works. Pages 1680-1681.**
3. **Step 131-Investing: The Rules of the Road. Pages 1682-1687.**
4. **Step 132-Use Rules of Reading to Analyse The Topic For Investment. Pages 1688-1689.**
5. **Step 133-Thinking, Logic and Mental Model. Pages 1690.**
6. **Step 134-Letting The World Do The Work For You. Pages 1691-1696.**

Part 19: Deep Work, Thinking, Logic and Mental Model.

1. **Step 135- Slow Down. Pages 1697-1700.**
2. **Step 136-NOT MULTITASK. Pages 1701.**
3. **Step 137-You Have Required To Do The Work For Deep Work, Thinking, Logic and Mental Model. Pages 1702-1717.**
4. **Step 138-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1718-1720.**
5. **Step 139-Intradisciplinary Thinking. Pages 1721-1761.**
6. **Step 140-Multidisciplinary Thinking. Pages 1762-1804.**
7. **Step 141-CrossDisciplinary Thinking. Pages 1805-1847.**
8. **Step 142-Interdisciplinary Thinking. Pages 1848-1890.**
9. **Step 143-Transdisciplinary Thinking. Pages 1891-1934.**
10. **Step 144-Journaling. Pages 1935.**
11. **Step 145-Letting The World Do The Work For You. Pages 1936-1941.**
12. **Step 146-Journaling. Pages 1902.**
13. **Step 147-Letting The World Do The Work For You. Pages 1943-1948.**

Part 20:Deep Work and Performance.

1. **Step 148-Performance Books. Pages 1950.**

2. **Step 149- Tiny Gains. Massive Results. Pages 1951-1902.**
3. **Step 150-The Ultimate Deliberate Practice Guide: How to Be the Best. Pages 1953-1973.**
4. **Step 151-Review, Reflection, Review and Accountability. Pages 1974-1975.**
5. **Step 152-Improvement. Pages 1976**
6. **Step 153- Feedback System In Place. Pages 1976.**
7. **Step 154-Repeat. Pages 1977.**
8. **Step 155-Letting The World Do The Work For You. Pages 1978-1983.**
9. **Step 156- Spend 5k-10k Hours On subject to Become Expert. Pages 1984.**

Part 21:Deep Work and Prediction

1. **Step 157-Prediction Book. Pages 1986.**
2. **Step 158- Steps In Prediction. Pages 1987-1990.**
3. **Step 159-You Have Required To Do The Work For Deep Work, Thinking, Logic and Mental Model. Pages 1991-2006.**
4. **Step 160-Letting The World Do The Work For You. Pages 2007-2012..**

Part 22; Deep Work and Feynman Technique.

1. **Step 161-Feynman Technique. Pages 2014-2026.**

Part 23:Sport and Jiujitsu, Judo and Wrestling.

1. **Step 162-What Trainings Do I Do On Daily Basis Pages 2028-2030.**
2. **Step 163-What Specific Training Do I Want To Practice Today. Pages 2031-2041.**
3. **Step 164- Letting The World Do The Work For You. Pages 2042-2047.**
4. **Step 165- Reflection, Review and Improvement. Pages 2048-2049.**

Part 24:Sport and Fighting Sport, Conditioning, Stretching and Flexibility, Strength, Breathing, Mental Tough And Develop Mindset.

1. **Step 166-Books On Muscle Training. Pages 2051.**
2. **Step 167-What Trainings Do I Do On Daily Basis Schedule. Pages 2052-2054.**
3. **Step 168-What Specific Training Do I Want To Practice Today. Pages 2055-2064.**
4. **Step 169- Letting The World Do The Work For You. Pages 2065-2070.**
5. **Step 170- Reflection, Review and Improvement. Pages 2071-2072.**

Part 25: Journaling and Review of *A* Month.

1. **Step 171-Materials Needed and Listen And Follow Rules of Reading For Journaling and Review of *6* Month And Month. Pages 2074.**
2. **Step 172-Reflect. Pages 2075.**
3. **Step 173-Analyse Strength and Weaknesses. Pages 2076.**
4. **Step 174- Analyse Threats and Opportunities. Pages 2076.**
5. **Step 175- Improvement. Pages 2076.**
6. **Step 176- Steps to Take To Do Better and Improve. Pages 2077.**
7. **Step 177- Ideas and Gratitude. Pages 2077.**

Part 26: Journaling and Review of Week And Day.

1. **Step 178-Materials Needed and Listen And Follow Rules of Reading For Journaling and Review of The Week. Pages 2079.**
2. **Step 179-Reflect. Pages 2080.**
3. **Step 180-Analyse Strength and Weaknesses. Pages 2081.**
4. **Step 181- Analyse Threats and Opportunities. Pages 2081.**
5. **Step 182- Improvement. Pages 2081.**
6. **Step 183- Steps to Take To Do Better and Improve. Pages 2082.**
7. **Step 184- Ideas and Gratitude. Pages 2082.**

Part 27: Stoic and Stoicism.

1. **Step 185-You Have Required To Do The Work For Stoic and Stoicism. Pages 2084-2099.**
2. **Step 186-Decide The Rules of Reading for Stoic and Stoicism. Pages 2100-2101.**
3. **Step 187- Stoic and Stoicism Books. Pages 2102-2103.**

4. **Step 188-Thinking, Logic and Mental Model. Pages 2104.**
5. **Step 189-Journaling. Pages 2105.**
6. **Step 190-Letting The World Do The Work For You. Pages 2106-2111.**

Part 28: Learning.

1. **Step 191-Books For Studies. Pages 2112-2114.**
2. **Step 192-Classical Education Curriculum. Page 2115-2117.**
3. **Step 193- UltraLearning Pages 2118-2237.**
4. **Step 194- How To Be Straight A Student. Pages 2238-2310.**

Part 29: Parenting.

1. **Step 195-What Should I do As Parent. Pages 2311-2314.**
2. **Step 196- You have required to Do the Work. Pages 2315-2330.**
3. **Step 197- Letting the world Do The Work For you. Pages 2331-2336.**

Part 30: Sales.

1. **Step 198-Books On Sales Pages 2338.**
2. **Step 199- You have required to Do the Work. Pages 2339-2354.**
3. **Step 200- Letting the world Do The Work For you. Pages 2355-2360.**
4. **Step 201-Use Thinking, Logic, Mental Tools, Thinking Tools 2361.**

Part 31: Situational Awareness.

1. **Step 202-Books On Situational Awareness. Pages 2363.**
2. **Step 203- You have required to Do the Work. Pages 2364-2379.**
3. **Step 204- Letting the world Do The Work For you. Pages 2380-2385.**
4. **Step 205-Use Thinking, Logic, Mental Tools, Thinking Tools 2386.**

Part 32: Pareto Principle, Vital Few, Trivial Many or 80/20 Principle.

1. **Step 206-80/20 Principle. Pages 2388-2395.**

Part 33:Classical Books, Liberal Art and Great Books of Western World

1. **Step 207- Great Books Of Western World. Pages 2397-2418.**
2. **Step 208- Classical Books. Pages 2419-2429.**
3. **Step 209-How To Get Liberal Arts Education without Degree. Pages 2430-2436.**

Part 34:Motivation Quotes

1. **Step 210-Motivation Quotes. Pages 2438-2444.**

Part 35:Mental Toughness And Focus

1. **Step 211-All of David Goggins' Mental Shifts to Reach Full Potential. Pages 2446-2449.**
2. **Step 212- Kobe Bryant Story. Pages 2450-2453.**
3. **Step 213- Michael Jordan Story. Pages 2454.**
4. **Step 214-Tim Grover and Work Ethic. Pages 2455-2471.**
5. **Step 215- Focus and Books on Focus. Pages 2472.**

Part 36:Deep Life, Deep Work and Benjamin Franklin Daily Routine

1. **Step 216- Deep Life, Deep Work and Benjamin Franklin Daily Routine. Pages 2474-2571.**
    - **I. Stage 0- Core System. Pages 2476-2481.**
        - **Discipline**
        - **Values**
    - **II. Stage 1- Core Productivity. Pages 2482-2529**
    - **III. Stage 2- What Projects Do I Commit. Pages 2530.**
    - **IV. Stage 3- How To Fix My Schedule. Pages 2531.**
    - **V. Stage 4- Prepare The Environment, Tools and Eliminate Distractions. Pages 2532-2534**
    - **VI. Stage 5- Hack Meetings, Phones and Emails and Other Technologies. Pages 2535-2539.**
    - **VII. Stage 6- Understand Importance Of Slow Productivity And Apply Slow Productivity In My Life. Pages 2540-2541.**
    - **VIII. Stage 7-How To Attack Large Project. Pages 2542.**
    - **IX. Stage 8-Understand The Reward Is Waiting For Me For Doing Deep Work. Pages 2543.**
    - **X. Stage 9-Preparation Of The Task. Pages 2544.**
    - **XI. Stage 10- Remind and Understand Law Of Productivity For Deep Work. Pages 2545-2548.**
    - **XII. Stage 11-Pre Deep Work Routine. Pages 2549.**
    - **XIII. Stage 12- Understand About Focus and Hard Focus. Pages 2550.**
    - **XIV. Stage 13- Being Focus Doing Deep Work. Pages 2551-2566.**
    - **XV. Stage 14-Post Deep Work. Pages 2567-2570.**

Step 1-Reasons Do and Do Not Read Generally The Newspaper On Daily Basis.

1. Reasons Do Read Newspaper.

I. **Ask Yourself, If I am Reading Newspaper for Data, Facts, Deep Work, Academic, Finance, Investigative Journalism, Research, Analysis, Syntopicon and Writing. If The Answer is No, then do not read Newspaper At all.**

2. Reasons Do Not Read Generally The Newspaper On Daily Basis.

I. **The problem is news doesn't make us informed. In fact, the more news we consume the more misinformed we become.**

II. **"When information is cheap, attention becomes expensive." Information is something we are all curious about but how accurately can we predict the future if we fail to understand the past?**

III. **As news has become easier to distribute and cheaper to produce, the quality has decreased and the quantity has increased.**

IV. **We do not to ask ourselves questions about the media we consume: Is this good for me? Is this dense with detailed information? Is this important? Is this going to stand the test of time? Is the person writing someone who is well informed on the issue? Asking those questions makes it clear the news isn't good for you.**

V. **News producers perpetuate a culture of "tune in, don't miss out, someone knows something you don't, follow this or you'll be misinformed, oh wait, look at this!" The time used to consume news comes out of time that could be used for timeless content.**

VI. **Most of what you read online today is pointless. It's not important to living a good life. It's not going to help you make better decisions. It's not going to help you understand the world. It's not dense with information. It's not**

going to help you develop deep and meaningful connections with the people around you.

VII. **Like a drug, the news is addictive. Not only does it alter your mood, but it keeps you wanting more.**

VIII. **While platforms like Facebook play a role in our excessive media consumption, we are not innocent. Far from it. We want to be well informed. (More accurately, we want to appear to be well informed.) And this is the very weakness that gets manipulated.“To be completely cured of newspapers, spend a year reading the previous week’s newspapers.”**

IX. **When you stop reading the news the first thing you notice about people who read the news is how misinformed they are. Often, they cherry-pick one piece of information and give it enormous weight in their opinions. Like the dog that didn’t bark you realise that they have a tiny lens into a big and messy issue.**

X. **Another thing you notice is that you weren’t as well informed as you thought. The news didn’t make your opinions more rational, it just made you more confident you were right. Rarely do we read things we disagree with. It’s much easier to just put our walls up and tune out. Filtering our own news like this self-reinforces what we already believe.**

XI. **Another thing you notice is how people who are in the news a lot worry about what the news says about them. Not only does this increase their anxiety but it changes how they think and act. Instead of getting feedback from reality, they crave validation in the printed opinion of others.**

XII. **Not reading news shows you how often what you thought was your thinking belonged to someone else. Thinking is hard. It’s much easier to let someone else think for you. Without news in my life, I find that I say “I don’t know” more often.**

Step 2-Reasons Do and Do Not Use Internet.

1. Book For NOT Using Internet and digital media

I. Cal Newport Digital Minimisation

2. Reason Do Use Internet

I. **Ask Yourself, If I am Use Internet for Data, Facts, Academic, Communication, Decision Making, Deep Work, Finance, Strategy, Teaching , Writing. Investigative Journalism, Research, Analysis, Syntopicon, Searching for Book, Article, Talk, Discussion, Debate, Speeches, Newspaper, Journal And Sport and Sport Analysis. If The Answer is No, then do not USE Internet At all.**

3. Reasons Do Not Use Internet.

I. **Mental Health Issues-**Depression, anxiety and other mental health disorders have risen because the diagnosis methods have improved yes, but also because of isolation and the triggers and stresses. Studies have been done by many, including University of Chicago neuroscientist John Cacioppo. Social media is causally linked to self-harm, **especially in brain plastic teenagers**. We know that Instagram harms the mental health of young girls, yet we still follow and like, as though we cannot choose.

II. **The Addictive Internet-**Internet outlets are designed to be addictive. Notifications from Facebook give dopamine rewards for those red numbers, sites are made blue so you trust them more, and yellow so that you are more likely to be generous with your donations. Those are implications of the psychology of colour. Emails are sent, notifications sent, applications sneak reminders about Instagram via Facebook, and Google will stress its Youtube videos over others.

Step 3-Reasons Do And Do Not Use TV and Youtube, Email And Whatsapp.

1. Reason Do Watch Youtube

I. **Ask Yourself, If I am Watching Youtube For following Reasons: Improve Skills, Learning, Investigative Journalism, Analysis, Research, Syntopicon, Data, Facts, Listen Music, Academic, Learning, Communication, Deep Work, Finance, Professional, Strategy, Tactics, Teaching, Writing, Sport and Sport Analysis. If The Answer is No, then do not WATCH Youtube At all.**

2. Reasons Do Not Use TV and Youtube.

I. **It feeds your mind with lies.** A great reason to stop watching television is that it's feeding your mind with lies. Mainstream television is controlled by the corporate elite, which, due to its vested interests, brainwashes TV viewers with false information.

II. **It turns you into a mindless consumer**. Most TV channels exist purely for the economic gain of their corporate owners, and what is a better way to earn money than by displaying commercials? Manipulative advertising is urging people to buy products, by making them believe that, to be happy and successful, all they need is to consume — and that the more stuff they consume, the better their life will get. In reality, however, material objects don't contribute much to our well-being once our basic physical needs are met, hence buying more stuff to satisfy our emotional needs will always leave us disappointed and unfulfilled.

III. **It makes you feel bad about yourself.** For advertisements to work, they first need to convince you that you are not good enough as you are. For example, in order to persuade you to buy beauty and fashion products, they first need to make you believe that you are ugly and unattractive. Or, in order to persuade you to buy a shiny, expensive car, they first need to make you feel that you are unimportant. In other words, commercials turn you into an enemy of yourself and then pretend that they can fix you.

IV. **It's harming your health.** Another obvious yet often unrecognised reason why you'd better stop watching TV is that it's having a negative impact on your health. Indeed, over the last years research has shown that watching TV for even just a couple of hours every day can significantly increase the chances of obesity, heart disease, and diabetes.

V. **It disconnects you from people.** People are social beings with a deep desire to connect and communicate with others. However, being used to spending hours upon hours watching TV, the majority of them sooner or later end up feeling lonely, away from the presence of friends and family. Naturally, they become depressed, since they don't have anybody to share their experiences with during their journey of life.

VI. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

3. Check SMS, Email and WhatsApp Twice A day.

I. **At Lunch Time and In the Evening.**

4. Answer A Call Only

I. **Family (at all Time).**

II. **Job Interview (specified Time).**

III. **For Others Be Very Hard To Reach. They Can Reach Either Call or Email.**

5. When Use PC. I am Not using for the following Reasons, then Do not USE PC at All:

I. For Research, Reading, Deep Work, Bible Study, Writing, Journaling, Setting Up Goals, Sport Analysis, Analysis, Syntopicon, Teaching, Strategy and Tactics
II. For Check Emails, Letters.
III. For Finance and Investment.
IV. For Inserting Sport Techniques and What do I do.

Step 4-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
   A. The Myth of Multitasking_ How Doing it All Gets Nothing Done

Part 2: Steps In Choosing Topic, Skimming The Books, Articles Debate, Discussion For Deep Work Or Deep Study Or Bible Study.

Step 5 -How To Become Polymath.

1. What Are The Lesson, How To Become Polymath.

A. Lesson 1- Diversify

I. The winning strategy of polymath is diversification.
II. Polymath always has several projects on the go.
III. The successful polymath trying to get range of skills in the areas between fields that they will be able to explore and capitalise on.
IV. Many polymaths has peers who worked on the same projects and even have rivals.

B. Lesson 2-Be fearless

I. Polymath are working by themselves despite sometimes extreme resistance and interference from the rest of world.
II. Many of polymaths have had to push back against ignorance, fear, politics and more.
III. Polymath is driven by deep inner drive for knowledge, the misunderstanding and disapproval of others is just small impediment.

C. Lesson 3-Seek Authenticity

I. Polymaths strive for new and unique achievement: fresh visions, novel horizons and totally original combination of ideas.
II. Polymaths resist easy definition and focus simply on being what they are, following what inspires them and exploring their unique endowment of gifts to the fullest.
III. Polymath acknowledge mistakes, because the faster they admit they are wrong, the sooner they can find a way to be right.
IV. Polymath is motivated by curiosity and the will for mastery.

2. Listen, and Apply The Following Books on Polymaths

A. Learn Like like a polymath how to teach yourself anything By Peter Hollins

B. THE POLYMATH UNLOCKING THE POWER OF HUMAN VERSATILITY By WAQĀS AHMED

Step 6 - Choose The Topic.

1. **Read About The Past: If You do not know the Past, then we will tend to Repeat The Same Mistakes**

2. **List of Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics.**

   A. Academic Fields.

   I. Humanities.

   - **Performance Arts.**
   - **Visual Arts.**
   - **History.**
   - **Languages and Literature.**
   - **Law.**
   - **Philosophy.**
   - **Religious Studies.**
   - **Theology.**

   II. Social Science.

   - **Anthropology.**
   - **Archeology.**
   - **Economics.**
   - **Geography.**
   - **Political Science.**
   - **Psychology.**
   - **Sociology.**
   - **Social Work.**

   III. Natural Science.

   - **Biology.**
   - **Chemistry.**
   - **Earth Science.**
   - **Astronomy.**
   - **Physics.**

IV. Formal Science.

- **Computer Science.**
- **Mathematics.**

V. Applied Science.

- **Agriculture.**
- **Architecture and Design.**
- **Business.**
- **Divinity.**
- **Education.**
- **Engineering and Technology.**
- **Environmental studies and forestry.**
- **Family and Consumer Science.**
- **Human Physical performance and recreation.**
- **Journalism, media studies and communication.**
- **Law.**
- **Library and Museum Studies.**
- **Medicine and Health.**
- **Military Science.**
- **Public Administration.**
- **Social Work.**
- **Transportation.**

B. Syntopicon Part 1 and Part 2

C. Great Conversatioj

D. Great Problems and how to solve them in my Working Industry.

E. Great Inventions.

F. Character Quality.

G. Thematic

H. Topics

I. Words

J. Great Inventors.

K. Great Thinkers

L. Great Philosophers

M. Great Problems in History.

N. Great Events in History.

O. Great People in History.

P. Great Ideas.

I. Truth.

II. Goodness.

III. Beauty.

IV. Liberty.

V. Equality.

VI. Justice.

VII. ANGEL.

VIII. ANIMAL.

IX. ARISTOCRACY.

X. ART.

XI. ASTRONOMY AND COSMOLOGY.

XII. BEING.

XIII. CAUSE.

XIV. CHANCE.

XV. CITIZEN.

XVI. CONSTITUTION.

XVII. COURAGE.

XVIII. CUSTOM AND CONVENTION.

XIX. DEFINITION.

XX. DEMOCRACY.

XXI. DESIRE.

XXII. DIALECTIC.

XXIII. DUTY.

XXIV. EDUCATION.

XXV. ELEMENT.

XXVI. EMOTION.

XXVII. EQUALITY.

XXVIII. ETERNITY.

XXIX. EVOLUTION.

XXX. EXPERIENCE.

XXXI. FAMILY.

XXXII. FATE.

XXXIII.FORM.

XXXIV.GOD.

XXXV.GOOD AND EVIL.

XXXVI.GOVERNMENT.

XXXVII.HABIT.

XXXVIII.HAPPINESS.

XXXIX.HISTORY.

XL. HONOR.

XLI.HYPOTHESIS.

XLII.IDEA.

XLIII.IMMORTALITY.

XLIV.INDUCTION.

XLV.INFINITY.

XLVI.JUDGMENT.

XLVII.JUSTICE.

XLVIII.KNOWLEDGE.

XLIX.LABOR.

L. LANGUAGE.

LI. LAW.

LII. LIBERTY.

LIII.LIFE AND DEATH.

LIV.LOGIC.

LV. LOVE.

LVI.MAN.

LVII.MATHEMATICS.

LVIII.MATTER.

LIX.MECHANICS.

LX. MEDICINE.

LXI.MEMORY AND IMAGINATION.

LXII.METAPHYSICS.

LXIII.MIND.

LXIV.MONARCHY.

LXV.NATURE.

LXVI.NECESSITY AND CONTINGENCY.

LXVII.OLIGARCHY.

LXVIII.ONE AND MANY.

LXIX.OPINION.

LXX.OPPOSITION.

LXXI.PHILOSOPHY.

LXXII.PHYSICS.

LXXIII.PLEASURE AND PAIN.

LXXIV.POETRY.

LXXV.PRINCIPLE.

LXXVI.PROGRESS.

LXXVII.PROPHECY.

LXXVIII.PRUDENCE.

LXXIX.PUNISHMENT.

LXXX.QUALITY.

LXXXI.QUANTITY.

LXXXII.REASONING.

LXXXIII.RELATION.

LXXXIV.RELIGION.

LXXXV.REVOLUTION.

LXXXVI.RHETORIC.

LXXXVII.SAME AND OTHER.

LXXXVIII.SCIENCE.

LXXXIX.SENSE.

XC.SIGN AND SYMBOL.

XCI.SIN.

XCII.SLAVERY.

XCIII.SOUL.

XCIV.SPACE.

XCV.STATE.

XCVI.TEMPERANCE.

XCVII.THEOLOGY.

XCVIII.TIME.

XCIX.TRUTH.

C. TYRANNY AND DESPOTISM.

CI. UNIVERSAL AND PARTICULAR.

CII.VIRTUE AND VICE.

CIII.WAR AND PEACE.

CIV.WEALTH.

CV.WILL.

CVI.WISDOM.

3. **Books on the Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics.**
    I. **The Great Ideas: A Syntopicon of Great Books of Western World part 1 By Mortimer Adler.**
    II. **The Great Ideas: A Syntopicon of Great Books of Western World part 2 By Mortimer Adler.**
    III. **Great Thinkers, Great Ideas By Vincent J Falcone.**
    IV. **The Oxford Companion to English Literature.**
    V. **Treasury Scripture Knowledge.**

4. **Pick Different Areas To Achieve.**
    I. **Pick a minimum of Three Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics, or skills that are sufficiently distinct from each other. Do not choose subset of the same subject.**
    II. **Instead choose combination which are different and distinct and even better if these have some relevance to your work.**

5. Decide Any Topics, Problem or Courses I Will Study Academically, Self Learning and Autodidactic or Deep Work.

I. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

II. **Brainstorm Idea, Topics and Problems.**

- **A. What Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics Do I want To Study?**
- **B. Do I want to study the topic related to my Job, Hobby and Interest?**
- **C. Do I want To Study Newest Topic, Problem or The topic which stood the test of time?**
- **D. Make A list of Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics that I am Interested.**

III. **Select A Topic or Course.**

- **A. Pick Ideas, Problems, Historical Events, Inventions, Inventors, Historical People, Great Problems and Topics. I am interested in at the moment.**
- B. Choose a problem or topic above yourself which are challenging.
  - Choose your topics carefully: Not everything that you study suits this technique. Usually abstract complex ideas are best understood by Feynman technique but ideas that are evidence-based or observational might not really be suited for this.
- C. Why should I solve this problem? (give positives).
- D. Why should I solve this problem? (give negatives, what would happen if I would not solve this problem?).
- E. Define the topic or problem?
- F. Read Great Books of Western World, and Reflect on the current world and Move Forward.
- G. Read About The Past: If You do not know the Past, then we will tend to Repeat The Same Mistakes.

6. Write What I Do Know About the Topic or Problem and What I Do Not Know.

I. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

II. Selecting a concept to study compels you to be intentional about. what you know, what you don't know and what You think You know. It also forces you to choose a topic that's small enough that it could reasonably fit onto one or several pages.

A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle but never fool yourself about where it stands today, and never be afraid to say "I don't know."

B. **You face what you don't know**. By writing a topic down on a blank page, you acknowledge you're starting from scratch or at least filling in some blanks. In doing so, take the initial step in the process.

C. **You need to be specific**. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.

III. Write Down General Facts About The Topic That I Know.

IV. Identify and define the current assumptions on topic or problem.

V. Write Down What Would I like To Learn About The Subject.

VI. Identify where you are reasoning from analogy.

VII. Break Down the problem into its fundamental principles.

VIII. How am I going to conduct research?

IX. Who else has same problem, and solved the problem.

X. Have they written a book about this topic?

XI. Have they recommended any books related to this topic?

XII. Have they recommended a of book related to this topic?

XIII. Build your foundation. The key here is brutal honesty with yourself about What we really know about the Topic.

XIV. Understanding the basics allows us to predict what matters. Put simply, people who understand the basics are better at understanding the Consequences.

XV. This helps to find out what exactly we do know and do not know about the topic.

XVI. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.

7. Analyse Current Skills and Experience.

I. Analyse current skills, experiences and interests to spot gaps in knowledge.

II. Where are you lacking compared to your future self?

III. What do you already know and do well?

IV. What do you still need to learn?

V. Can other people fill in these gaps of knowledge?

VI. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.

Step 7 - Three Questions to Ask Yourself Before Saying YES to a New Commitment

1. **Everyone wants a part of your time. The problem is we don't really understand the nature of time. And so we waste it. We can learn to better harmonise our time across the things that we want. One of the ways to do that is to avoid things that are unproductive.**
2. **We need to learn that the most powerful productivity tool ever invented is simply the word "no." And you can say no with grace. But how do we know when we should say yes and when we should say no?**
3. **Ask yourself three simple questions before you accept any new commitment.**
    I. **Am I the right person?**
    II. **Is this the right time?**
    III. **Do I have enough information?**
    IV. **If the answer to any of those questions is no, then don't do it.**

Step 8-What Tools I Will Use For Learning?

1. The Broad Overview.

I. Look at the ***What to use in different situation***, and find out what tools will I use for learning.

II. Find Overall Broad Overview of the Topic.

III. What are the essential details we need to know before attempting to master it?

IV. What does this topic or skill truly entail?

V. How extensive is the subject?

VI. Taken big topic cut it down to pieces and decided which piece we like best

- Coding as broad subject, we divided into specific languages and agreed upon one or a few languages to learn.
- Focus on one or two offers us much bigger and higher chance of success.

VII. Our goal is to infer the appropriate scope for our topic such that it takes from few weeks to a month to grasp.

VIII. Determine appropriate scope that can be learned within a practical timeframe. This time period must also be carefully chosen to maximise focus on task.

IX. Follow your own method of breaking down subjects into small parts. You are organise information for your own specific goals, not based on how others have done it.

X. Condemnation before investigation. Set Aside Whatever you been taught and believe about topic and look with fresh eyes and try to hear what text is saying.

XI. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 9-Narrow Down Subject or Topic.

1. Narrow Down.

I. Narrow down your subject, but this one is restricted to understand enough about the topic to discuss intelligibly and found out for yourself what the true scope is.
   - What is it about?
     - Is the topic something basic that a layperson could grasp in few hours or is it too complex like physics for an untrained individual to pursue?
     - How much literature has been devoted to this subject?
     - How much do you need to learn to understand the topic adequately?

II. What are Basics, Foundation and Fundamental of the Craft or Topic.
   - Without Basics, Foundation and Fundamentals, You cannot Progress.

III. What Do I need For Fundamental, Foundation and Basic?

IV. You don't need to understand the latest study in biology, but you sure as heck better understand the concept of evolution because it applies to so much more than animals.

V. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

2. Define Success.

I. Look at the ***What to use in different situation***, and find out what tools will I use for learning.

II. We need to design an objective, measurable criteria for success so that we can know whether we have fulfilled it to a mathematical certainty.

III. The best way to effectively complete this step is to consider why you intended to learn your chosen subject at all.

IV. Is there a particular task or function that you would like to be able to perform through learning your chosen subject?
   - E.g Digital photography-the goal of learning digital photography and criteria of using manual modes along with manipulating lighting are both sound.
   - To master digital photography completely, you would have to learn about all of its various subtopics and depending on your motivation for studying, it might be gratifying to achieve that outcome through learning experience.

V. Ideally the goal should be to learn something that is practically beneficial since using your new skills will reinforce your entire learning process, making easier for you to retain the knowledge.

Step 10-Information overload: Why we're facing it and how to handle it.

1. **It's learning how to search out, consume, and filter it in the best way possible.**
    I. **There's nothing wrong with having a healthy thirst for current events. The problem is that our news sources have turned from a water fountain to a firehose and propaganda.**
    II. **Instead of making a choice and feeling good about it, we end up in a constant state of FOMO, stressing that we've made the wrong decision and searching for something better.**
    III. **"You have to choose what you consume consciously… The information you allow yourself to process affects you greatly. You can become confused quickly with all of the conflicting voices, opinions, and options in the world today."**

2. **How not to be overloaded with Information**
    I. **Choose "Just in time" over "Just in case" information. There's a difference between searching out information because you need it now versus just storing it for later.**
    II. **"Think about the last technical topic you learned from either a class or a book. How much of the details do you remember? The answer probably depends a lot on whether you knew that you needed to be able to do that particular thing you were learning. And that's huge. "Because if even at a high level you know you need to learn PHP, if the parts your studying don't seem directly related to what you know you want to do, the learning will be weak." Think about how you can apply this technique to your information consumption. Rather than read every news story just in case it comes up in conversation, seek out only what you need now.This doesn't mean that you should forgo any information that doesn't have an immediate purpose. But simply to use this as a filter when you're feeling the effects of information overload.**

III. **Slow the news cycle by choosing a trusted source and signing up for their newsletter.**
IV. **Rather than get caught up in the “breaking” part of news where facts are more uncertain, slow news is the idea of a longer news cycle that focuses more on fact-checking and careful reporting than being first to report on a story. Gillmor’s gone so far as to cut down on news-based RSS feeds, stop checking Twitter, and even deleted his browser bookmarks to news sites. As he explains: “The more current the news is, the more skeptical I am of what I’m seeing.”Instead, he gets his “slow news” from mailing lists where experts send out links to information they believe is useful and important.**
V. **If you’re feeling the effects of information overload, you can always take a break Wikipedia never prompts you to go take a break. While YouTube and Netflix purposefully push you to consume more and more. Instead, it’s up to us to become better content and information consumers. We should all schedule breaks into our day, set hard limits on when and how much information we consume, and keep our digital and physical spaces clutter free and well organised.**

Step 11-Compile Resources And Create Curriculum.

1. Compiling Resources.

I. Look at the ***What to use in different situation***, and find out what tools will I use for learning.

II. We need to do is compile every recourse we can find on our topic without filtering them. Given the plurality and different mediums used for sharing information. It is advisable to give your method of compilation some lengthy consideration to help you think out of the box.

III. Find the appropriate books, but consider other mediums like blogs, courses, through friends, find expert, podcasts, magazines, journals, articles, newspapers.

IV. Read Great Books Of Western World or Classical Books.

V. Maximise the Number of good resources at your disposal on the topic.

VI. Create a folder for bookmarks on the topic with relevant resources.

VII. D**o It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

2. Create A Curriculum.

I. Look at the ***What to use in different situation***, and find out what tools will I use for learning.

II. Create a learning plan for the subject. This is creating an outline what you want to learn.

III. The Subtopic you have chosen, break down into smaller parts.

- Review and Analyse table of contents in the books, videos, blogs that you chosen.
- This can help you to see the structure and even see how everything begins to coverage and overlap. Observe different authors have break down the topic. If all the authors break down similar way the topic, then you should follow same learning plan.
- Based on the different authors, you can also get the sense of which perspective on the topic are less frequently included.

Step 12-Filter Resources.

1. Filter Resources.

I. Look at the ***What to use in different situation***, and find out what tools will I use for learning.

II. **As Learner, if I am going to search for the resources online, does Search Engines put me in the Filter Bubble?**

   A. **We're increasingly trapped inside an algorithm that filters our news based on what it thinks is best for us.**

   B. **Computers and the algorithms they run are increasingly aware of the things we seem to like. They learn from what we click on and tailor results so we get more of what we like and less of what we don't like.**

   C. If Google knows that I'm a democrat or republican they *could* now add a filter to my news to show me only the stories I'm predisposed to agree with. Based on their guess as to my education level, they may then tailor the article's words and language to maximize its impact on me. In this world, I only see things I agree with and writing that I easily comprehend and that's a problem

III. As Learner, there are number of resources available on any given topic, but we simply don't have the time to pursue them all.

IV. Attempt to read every book, blogpost or article on single topic bound to result in failure.

V. Filter resources. The primary goal at this point is to prune (cut) our collection of resources to preserve only the best and avoid overwhelmed by all the material we have collected.

VI. This helps financially, since you won't need to purchase ten different books to learn about topic.

VII. The most important part of this step is to carefully and efficiently scan through your resources to select the best ones among them.

VIII. The entire purpose of selecting these particular resources is for you to learn a specific topic that you choose earlier, not to take all information you have gathered.

IX. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 13-Choose A Book, Article, Talk, Discussion, Debate, Speeches, Research, Newspaper, Journal And Give The Reason of The Choice

1. **Study Foundation Of The Topic.**
2. **Find Who is Leading Figure On That Topic.**
3. **To Find Book, Article, Talk, Discussion, Debate, Speeches, Research, Newspaper and Journal, Use the Following Books**
   I. Great Books of the Western World Part 1: By Moritmer Adler.
   II. Great Books of the Western World Part 1: By Moritmer Adler.
   III. The CBPC Reference Library Catalogue.
   IV. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 1.
   V. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 2.
   VI. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 3.
   VII. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 4.
   VIII. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 5.
   IX. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 6.
   X. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 7.

XI. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 8.

XII. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 9.

XIII. An Index to English Periodical Literature on the Old Testament and Ancient Near Vol 10.

XIV. Google.

XV. Library.

XVI. Google Scholar.

XVII. internet.

4. Choose A Book, Article, Talk, Discussion, Debate, Speeches, Research, Newspaper, Journal And Give The Reason of The Choice.

I. **It turns out that most of the time the best way to improve your Reading Return on Invested Time (RROIT) is to carefully filter the books you read.**

II. **Create a tentative bibliography of your subject by recourse to library catalogues, advisors, and bibliographies in books.**

III. **Inspect *all* of the Books, Articles, Talk, Discussion, Debates, Speeches, Research, Newspaper on the tentative bibliography to ascertain which are germane to your subject, and also to acquire a clearer idea of the subject.**

IV. **Do not choose the Books, Articles, Talk, Discussion, Debates, Speeches, Research, Newspaper which has idea have not stood the test of time.**

V. **Choose Books, Articles, Talk, Discussion, Debates, Speeches, Research, Newspaper on Topic that Time was Tested and withstand the scrutiny.**

VI. **Return on Investment on reading and understanding a concept from 500 years ago is highly likely to be exponentially greater in the long run than one presented only 5 years ago.**

VII. **Read Great Books of Western World, and Reflect on the current world and Move Forward.**

VIII. **If you must read the news, read it for the facts and the data, not the opinions.**

5. Ask Questions, Why I Will Use This Book, Articles, Talk, Discussion, Debates, Speeches, Research, Newspaper.

I. What is the reason I'm choosing this Book, Article, Talk, Discussion, Debate, Speeches, Researches, Newspaper and Journal on the topic?

II. Why do I think this book will be helpful or good on this topic?

III. Decide the reason I will Listen, read, research this Book, Article, Talk Discussion, Debate, Speeches, Researches, Newspaper and Journal on the topic?

IV. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

6. There are few type of reading:

- Read for Entertainment
- Read for Information
- Read for Understanding and Learning

Step 14-Intelligently Skimming Through The Book VERY FAST READING AND SKIMMING.

1. **Intelligently Skimming Through The Book.**
   - **I. Doing the Intelligently Skimming: Book, Text, Discussion, Talk, Speech, Communication, Research, Writing, Preach, Debate, Public Speaking.**
   - **II. Should take approximately 1-3 hours.**
   - **III. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**
   - **IV. Intelligently Skimming.**
   - **V. Decide, if this is worth to Pursue Further, Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method.**

VERY FAST READING AND Systematic Skimming or Pre-Reading.

Inspectional Reading I: Systematic Skimming or Pre-reading

1. **LOOK AT THE TITLE PAGE AND, IF THE Source HAS ONE, AT ITS PREFACE**. Read each quickly. Note especially the subtitles or other indications of the scope or aim of the book or of the author's special angle on his subject. Before completing this step you should have a good idea of the subject, and, if you wish, you may pause for a moment to place the book in the appropriate category in your mind. What pigeonhole that already contains other books does this one belong in?

2. **STUDY THE TABLE OF CONTENTS** to obtain a general sense of the book's structure; use it as you would a road map before taking a trip. It is astonishing how many people never even glance at a book's table of contents unless they wish to look something up in it. In fact, many authors spend a considerable amount of time in creating the table of

contents, and it is sad to think their efforts are often wasted. It used to be a common practice, especially in expository works, but sometimes even in novels and poems, to write very full tables of contents, with the chapters or parts broken down into many subtitles indicative of the topics covered. Milton, for example, wrote more or less lengthy headings, or “Arguments,” as he called them, for each book of Paradise Lost. Gibbon published his Decline and Fall of the Roman Empire with an extensive analytical table of contents for each chapter. Such summaries are no longer common, although occasionally you do still come across an analytical table of contents. One reason for the decline of the practice may be that people are not so likely to read tables of contents as they once were. Also, publishers have come to feel that a less revealing table of contents is more seductive than a completely frank and open one. Readers, they feel, will be attracted to a book with more or less mysterious chapter titles—they will want to read the book to find out what the chapters are about. Even so, a table of contents can be valuable, and you should read it carefully before going on to the rest of the book. At this point, you might turn back to the table of contents of this book, if you have not already read it. We tried to make it as full and informative as we could. Examining it should give you a good idea of what we are trying to do.

3. **Understand the language of the Resource.** This means skimming the index. Not only will this give you an idea for the range of topics covered but it will also tell you the other people the book connects to and the jargon used in the book.

4. **CHECK THE INDEX** if the book has one—most expository works do. Make a quick estimate of the range of topics covered and of the kinds of books and authors referred to. When you see terms listed that seem crucial, look up at least some of the passages cited. (We will have much more to say about crucial terms in Part Two. Here you must make your judgment of their importance on the basis of your general sense of the book, as obtained from steps 1 and 2.) The passages you read may contain the crux—the point on which the book hinges —or the new departure which is the key to the author’s approach and attitude. As in the case of the table of contents, you might at this point check the index of this book. You will recognize as crucial some terms that have already been discussed. Can you identify, for example, by the number of references under them, any others that also seem important?

5. **If the Source is a new one with a dust jacket, READ THE PUBLISHER'S BLURB.** Some people have the impression that the blurb is never anything but sheer puffery. But this is quite often not true, especially in the case of expository works. The blurbs of many of these books are written by the authors themselves, admittedly with the help of the publisher's public relations department. It is not uncommon for authors to try to summarize as accurately as they can the main points in their book. These efforts should not go unnoticed. Of course, if the blurb is nothing but a puff for the book, you will ordinarily be able to discover this at a glance. But that in itself can tell you something about the work. Perhaps the book does not say anything of importance—and that is why the blurb does not say anything, either. Upon completing these first four steps you may already have enough information about the book to know that you want to read it more carefully, or that you do not want or need to read it at all. In either case, you may put it aside for the moment. If you do not do so, you are now ready to skim the book, properly speaking.

6. **One reason why titles and prefaces are ignored by many readers is that they do not think it important to classify the Source they are reading**. They do not follow this first rule of analytical reading. If they tried to follow it, they would be grateful to the author for helping them. Obviously, the author thinks it is important for the reader to know the kind of book he is being given. That is why he goes to the trouble of making it plain in the preface, and usually tries to make his title—or at least his subtitle—descriptive. Thus, Einstein and Infeld, in their preface to The Evolution of Physics, tell the reader that they expect him to know "that a scientific book, even though popular, must not be read in the same way as a novel." They also construct an analytical table of contents to advise the reader in advance of the details of their treatment. In any event, the chapter headings listed in the front serve the purpose of amplifying the significance of the main title.

7. **From your general and still rather vague knowledge of the Source's contents, LOOK NOW AT THE CHAPTERS THAT SEEM TO BE PIVOTAL TO ITS ARGUMENT**. If these chapters have summary statements in their opening or closing pages, as they often do, read these statements carefully. At this point, you have an overview of the jargon and the journey the author is taking you on. It should be relatively easy to identify the pivotal chapter to the argument. Dive into these reading bits and pieces. How are they structured? How connected is it to the rest of the book?

Is this a place you want to end up? Turn the pages and dive in here and there with a few paragraphs or even pages.

8. **Finally, TURN THE PAGES, DIPPING IN HERE AND THERE, READING A PARAGRAPH OR TWO, SOMETIMES SEVERAL PAGES IN SEQUENCE, NEVER MORE THAN THAT.** Thumb through the book in this way, always looking for signs of the main contention, listening for the basic pulse beat of the matter. Above all, do not fail to read the last two or three pages, or, if these are an epilogue, the last few pages of the main part of the book. Few authors are able to resist the temptation to sum up what they think is new and important about their work in these pages. You do not want to miss this, even though, as sometimes happens, the author himself may be wrong in his judgment.

9. **Read the end.** Authors generally do a good job summarizing their work in the last few pages. This where they sum up what they think is most important about their work.

10. **Listen to an interview.** While this has nothing to do with the actual book, interviews can be a great way to get the gist of a book in 30m or so. Authors do so much promotion now that its relatively easy to find interviews. And of course, they use the best examples from the book in these interviews.

11. If the book is over your head this is reason to read it, as this helps to improve yourself and forces you to work on the book to understand.
12. There are Books that can be:
    I. Tasted.
    II. Swallowed.
    III. Chew and Digested.
13. **Deciding to Read a Book.**

14. That's how you intelligently skim a book. Once you get some practice, it should take at most, an hour.

15. Skimming helps you reach a decision point: Does this book deserve more of my time and attention? Why?

16. Unless you're reading for entertainment, if you can't answer that question, you can toss the book.

17. Mastering intelligent skimming will:

    - Save you a lot of time because most books are not worth reading.
    - Offer knowledge of the book's blueprint and contents so you know where to find stuff if you need it in the future.
    - Improve retention, if you decide to read the book in its entirety because you've primed your brain with the contents.

18. Do I need prerequisite for this book or not? Do I need Some Tools Necessary for Understanding this Book? Or Am I intellectually Lazy for this Book?

19. Do I need to put Enough of Thought and time to this book?

20. Never Read A book Just to Win an Argument, but be open minded for Author's Persuasion and convince.
21. It is not about how many books do you read, it is whether you digest of master thinkers. It is not about quantity, but about quality, like great books of western world or Stoics.
22. Great Writers are very specific about the words they use and how they use them. Great Writers, wrote a sentence that can be commented in a Book. While modern writers write a book that can be sum up in a sentence.
23. Do Not Try to put your thoughts, or what I feel the text could mean or mean to me into, but let the author say what does he mean and says in the text.
24. Some Books You need a Teacher, who Studied The Text to help you through the text.
25. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.
26. Do not read the newest books, but the great books of western world, stoic and classics, as these books stood the test of time.

Step 15- Find Out What Kind of Resource is this?

1. **Find Out What Kind of Book, Article, Debate, Discussion, Monologue, Dialogue, Discourse, Video, Newspaper, Newsletter, Letter is this.**
    I. **Bible Study.**
    II. **Theology.**
    III. **Poetry.**
    IV. **History.**
    V. **Theoretical.**
    VI. **Practical.**
    VII. **Biography.**
    VIII. **Autobiography.**
    IX. **Current Event.**
    X. **Science.**
    XI. **Popular Science.**
    XII. **Mathematics.**
    XIII. **Philosophy.**
    XIV. **Cannonical.**
    XV. **Philosophy.**
    XVI. **Social Science.**
    XVII. **Stories.**
    XVIII. **Plays.**
    XIX. **Epic.**
    XX. **Tragedy.**
    XXI. **Poems.**
    XXII. **Lyrics.**
    XXIII. **Non-Fiction.**
    XXIV. **Syntopicon.**
    XXV. **Research.**
    XXVI. **Speech.**

XXVII.Video.

XXVIII.Podcast.

XXIX.Dialogue.

XXX.Conversation.

XXXI.Communication.

XXXII.Films.

XXXIII.Debate.

XXXIV.Academic Journals

XXXV.Academic Articles

XXXVI.Documentary.

XXXVII.Conference.

PART 3: Rules of Reading for Entertainment and Basic Understanding For Deep Work, Or Deep Study, Or Bible Study

Step 16-Decide The Rules for Entertainment and Basic Understanding.

1. **There are few type of reading:**
   - Read for Entertainment.
   - Read for Information.
   - Read for Understanding and Learning.
2. **Decide The Rules for Basic Understanding.**
   - **A. Skimming:**
     - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
   - **B. Entertainment**
     - **I. Method 1-Speed Reading. Pages 58-63.**
   - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
     - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
     - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
     - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
     - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
     - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
     - **VI. Method 6-Devotional Bible Read. Pages 72-73.**

Step 17 - Dive In.

1. Dive In.

I. In this step, you would need to learn enough about the topic or module to then grasp it more extensively. This means you need to find basic information before attempting to learn it in further depth.

II. In this step it is simply to gain a basic familiarity with a particular module so that you can explore it independently.

III. Spend minimal amount of time on this step.

IV. Familiarise with concept of the topic.

V. Make notes of the concept that seems to be most relevant to my module.

VI. My goal is to only understand the basics, so that I am prepared for the next step.

VII. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 18-Use The Chosen Rules of Reading Method For Entertainment Or Basic Understanding and Follow Each Steps Of The Method Until Finish All Steps, And Follow Each Steps As many Times As I Want, While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step. FAST READING.

Method 1-VERY Fast Reading Speed Reading

Inspectional Reading I: Systematic Skimming or Pre-reading.

1 LOOK AT THE TITLE PAGE AND, IF THE BOOK HAS ONE, AT ITS PREFACE. Read each quickly. Note especially the subtitles or other indications of the scope or aim of the book or of the author's special angle on his subject. Before completing this step you should have a good idea of the subject, and, if you wish, you may pause for a moment to place the book in the appropriate category in your mind. What pigeonhole that already contains other books does this one belong in?

2. STUDY THE TABLE OF CONTENTS to obtain a general sense of the book's structure; use it as you would a road map before taking a trip. It is astonishing how many people never even glance at a book's table of contents unless they wish to look something up in it. In fact, many authors spend a considerable amount of time in creating the table of contents, and it is sad to think their efforts are often wasted. It used to be a common practice, especially in expository works, but sometimes even in novels and poems, to write very full tables of contents, with the chapters or parts broken down into many subtitles indicative of the topics covered. Milton, for example, wrote more or less lengthy headings, or "Arguments," as he called them, for each book of Paradise Lost. Gibbon published his Decline and Fall of the Roman Empire with an extensive analytical table of contents for each chapter. Such summaries are no longer common, although occasionally you do still come across an analytical table of contents. One reason for the decline of the practice may be that people are not so likely to read tables of contents as they once were. Also, publishers have come to feel that a less revealing table of contents is more seductive than a completely frank and open one. Readers, they feel, will be attracted to a book with more or less mysterious chapter titles—they will want to read the book to find out what the chapters are about. Even so, a table of contents can be valuable, and you should read it carefully before going on to the rest of the book. At this point, you might turn back to the table of contents of this book, if you have not already read it. We tried to make it as full and informative as we could. Examining it should give you a good idea of what we are trying to do.

3. CHECK THE INDEX if the book has one—most expository works do. Make a quick estimate of the range of topics covered and of the kinds of books and authors referred to. When you see terms listed that seem crucial, look up at least some of the passages cited. (We will have much more to say about crucial terms in Part Two. Here you must make your judgment of their importance on the basis of your general sense of the book, as obtained from steps 1 and 2.) The passages you read may contain the crux—the point on which the book hinges —or the new departure which is the key to the author's approach and attitude. As in the case of the table of contents, you might at this point check the index of this book. You will recognize as crucial some terms that have already been discussed. Can you identify, for example, by the number of references under them, any others that also seem important?

4. If the book is a new one with a dust jacket, READ THE PUBLISHER'S BLURB. Some people have the impression that the blurb is never anything but sheer puffery. But this is quite often not true, especially in the case of expository works. The blurbs of many of these books are written by the authors themselves, admittedly with the help of the publisher's public relations department. It is not uncommon for authors to try to summarize as accurately as they can the main points in their book. These efforts should not go unnoticed. Of course, if the blurb is nothing but a puff for the book, you will ordinarily be able to discover this at a glance. But that in itself can tell you something about the work. Perhaps the book does not say anything of importance—and that is why the blurb does not say anything, either. Upon completing these first four steps you may already have enough information about the book to know that you want to read it more carefully, or that you do not want or need to read it at all. In either case, you may put it aside for the moment. If you do not do so, you are now ready to skim the book, properly speaking.

5. One reason why titles and prefaces are ignored by many readers is that they do not think it important to classify the book they are reading. They do not follow this first rule of analytical reading. If they tried to follow it, they would be grateful to the author for helping them. Obviously, the author thinks it is important for the reader to know the kind of book he is being given. That is why he goes to the trouble of making it plain in the preface, and usually tries to make his title—or at least his subtitle—descriptive. Thus, Einstein and Infeld, in their preface to The Evolution of Physics, tell the reader that they expect him to know "that a scientific book, even though popular, must not be read in the same way as a novel." They also construct an analytical table of contents to advise the reader in advance

of the details of their treatment. In any event, the chapter headings listed in the front serve the purpose of amplifying the significance of the main title.

6. From your general and still rather vague knowledge of the book's contents, LOOK NOW AT THE CHAPTERS THAT SEEM TO BE PIVOTAL TO ITS ARGUMENT. If these chapters have summary statements in their opening or closing pages, as they often do, read these statements carefully.

7. Finally, TURN THE PAGES, DIPPING IN HERE AND THERE, READING A PARAGRAPH OR TWO, SOMETIMES SEVERAL PAGES IN SEQUENCE, NEVER MORE THAN THAT. Thumb through the book in this way, always looking for signs of the main contention, listening for the basic pulse beat of the matter. Above all, do not fail to read the last two or three pages, or, if these are an epilogue, the last few pages of the main part of the book. Few authors are able to resist the temptation to sum up what they think is new and important about their work in these pages. You do not want to miss this, even though, as sometimes happens, the author himself may be wrong in his judgment.

Inspectional Reading II: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed.
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed.
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed.
4. Read or Listen The Full Book Without Stopping.
5. Read or listen 25min and 5min break.
    - Read or Listen 20 pages an Hour according Mortimer Adler.
6. Read or Listen between 1-50 times the book.
7. Speed of Audiobook.
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed.
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Inspectional Reading III: Superficial Reading

1. Read or Listen The Full Book Without Stopping.
2. That rule is simply this: In tackling a difficult book for the first time, read it through without ever stopping to look up or ponder the things you do not understand right away.
3. Pay attention to what you can understand and do not be stopped by what you cannot immediately grasp. Go right on reading past the point where you have difficulties in understanding, and you will soon come to things you do understand. Concentrate on these.

Basic Questions a Reader Asks

1 Understand the language of the book. This means skimming the index. Not only will this give you an idea for the range of topics covered but it will also tell you the other people the book connects to and the jargon used in the book.

2. **Identify the pivotal points.** At this point, you have an overview of the jargon and the journey the author is taking you on. It should be relatively easy to identify the pivotal chapter to the argument. Dive into these reading bits and pieces. How are they structured? How connected is it to the rest of the book? Is this a place you want to end up? Turn the pages and dive in here and there with a few paragraphs or even pages.

3. WHAT IS THE BOOK ABOUT AS A WHOLE? You must try to discover the leading theme of the book, and how the author develops this theme in an orderly way by subdividing it into its essential subordinate themes or topics.

4**. WHAT IS BEING SAID IN DETAIL, AND HOW?** You must try to discover the main ideas, assertions, and arguments that constitute the author's particular message.

5**. IS THE BOOK TRUE, IN WHOLE OR PART**? You cannot answer this question until you have answered the first two. You have to know what is being said before you can decide whether it is true or not. When you understand a book, however, you are obligated, if you are reading seriously, to make up your own mind. Knowing the author's mind is not enough.

6**. WHAT OF IT?** If the book has given you information, you must ask about its significance. Why does the author think it is important to know these things? Is it important to you to know them? And if the book has not only informed you, but also enlightened you, it is necessary to seek further enlightenment by asking what else follows, what is further implied or suggested.

7. What is the structure, or blueprint, of the book “whereby the author develops his conception or understanding of that general subject matter?”

8. Ask Questions:

- Who?
- What?
- When?
- Where?
- Why?
- How?

8. **Listen to an interview.** While this has nothing to do with the actual book, interviews can be a great way to get the gist of a book in 30m or so. Authors do so much promotion now that its relatively easy to find interviews. And of course, they use the best examples from the book in these interviews.

FAST READING Methods for Basic Knowledge

Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4)

SQR4

I. Condemnation before investigation. Set Aside Whatever you been taught and believe about topic and look with fresh eyes and try to hear what text is saying.

II. Survey - Review the chapter before read or listen. The first step, survey or skim, advises that one should resist the temptation to read the book and instead first go through a chapter and note the headings, sub-headings and other outstanding features, such as figures, tables, marginal information, and summary paragraphs. This survey step typically only takes 3–5 minutes, but it provides an outline or framework for what will be presented. The reader should identify ideas and formulate questions about the content of the chapter.

III. Questions-Generate questions about the content of the reading. For example, convert headings and sub-headings into questions, and then look for answers in the content of the text. Other more general questions may also be formulated:
   - What is this chapter about?
   - What question is this chapter trying to answer?
   - How does this information help me?

IV. Read or Listen-Use the background work done with "S" and "Q" in order to begin reading actively. This means reading in order to answer the questions raised under "Q". Passive reading, in contrast, results in merely reading without engaging with the study material.

V. Recite-The second "R" refers to the part known as "Retrieve." The reader should try to retrieve from memory what was learned in the same manner as telling someone else about the information. It is important that the reader use his/her own words in order to formulate and conceptualise the material. Try recalling and identifying major points (heading/subheadings) and answers to questions from the "Q" step. This recital step may be done either in an oral or

written format and is related to the benefits of retrieval (testing effect) in boosting long-term memory for the material.

VI. Record.

VII. Reflect-The final "R" is "Review." Once you reach the end of the passage, review the material by repeating back to yourself what the point of the passage is using your own words. You may then repeat the process on the second set of questions.

Method 2 - Use 80/20 Principle For Reading

I. Never read a book from cover to cover, except for pleasure. When you are working, find out what the book is saying much faster than you would by reading it through.
II. Read Conclusion
III. Read Introduction
IV. Then Dip Lightly Into Any Interesting Bits.
V. Apply 80/20 Principle to find out, What are 20% of Pages, which provides 80% of Information.
    - **Once you Find Out, what is 20% input that gives 80% Output. Then You need to Put 100% effort into those 20% inputs, to achieve the best results. Additionally Remove Trivial Many.**

VI. Once You Identified 20%, then you need to put 100% effort into those 20%. The You need to do the following:
    - Read.
    - Ask Questions.
    - Review.
    - Read.
    - Ask Questions Again.
    - Review.

VII. **Summary:** The student summarises the topic, bringing his or her own understanding of the process. This may include written notes, spider diagrams, flow diagrams, labeled diagrams, mnemonics, or even voice recordings.
    - Who?
    - What?
    - When?
    - Where?
    - Why?
    - How?

VIII. **Test**: The student answers the questions drafted earlier, avoiding adding any questions that might distract or change the subject.

Method 3 - Preview, Question, Read, Summary, Test (PQRST)

PQRSTF

I. **Preview:** The student looks at the topic to be learned by glancing over the major headings or the points in the syllabus.

II. **Question**: The student formulates questions to be answered following a thorough examination of the topic(s).

III. **Read or Listen:** The student reads through the related material, focusing on the information that best relates to the questions formulated earlier.

IV. **Summary:** The student summarises the topic, bringing his or her own understanding of the process. This may include written notes, spider diagrams, flow diagrams, labeled diagrams, mnemonics, or even voice recordings.

- Who?
- What?
- When?
- Where?
- Why?
- How?

V. **Test**: The student answers the questions drafted earlier, avoiding adding any questions that might distract or change the subject.

Method 4-Flip Through Pages and Analyse

Flipping through the pages and analyse

I. Flip through pages or listen through few pages.
   - Find out what is on page.
   - Check Pictures, tables, how long is chapter.

II. Go to the end of chapter and see if there is any quiz or questions.
   - Check quiz or questions is to know what look for.
   - What the author think is important.
   - Use 80/20 rules.

III. Read or Listen Bold printed text.
   - Title.
   - Subtitle.
   - Headings.
   - Broke down information.

IV. Read or Listen first and last sentence of each paragraph.
   - First sentence is introduction and gives indication of what the paragraph looks like.
   - Last sentence summoned up the paragraph.

V. 80/20 Rules apply.
   - Review and decide the most important information 20% of material to give 80% of result or most important information.

VI. Repetition as many times as possible.

Method 5-Devotional Bible Study by Using Devotional Books

Step 1-Open Part 4-6 For Deep Work, Deep Study Bible. Then Open Bible. Choose A devotional Book.

1. Morning and Evening by Charles Spurgeon.
2. The MacArthur Daily Bible by John MacArthur.
3. The NKJV Daily Bible_ Read the Entire Bible in One Year.
4. Amplified Cross-Reference Bible.
5. New Spirit-Filled Life Bible_ Kingdom Equipping Through the Power of the Word.
6. The MacArthur Study Bible, English Standard Version.
7. Through the Bible Through the Year_ Daily Reflections From Genesis to Revelation.
8. Learn the Bible in 24 hrs. (complete).
9. How to Read the Bible through the Jesus Lens_ A Guide to Christ-Focused Reading of Scripture.

Step 2-Record Passage Information.

1. **R**ecord the name of the book in which passage you are studying is found.
2. Record chapter and verse number you have selected to study.

Step 3 Identify The Subject

1. Read the portion of Scripture which you have selected to study.
2. Select a title that summarises the subject and record it on your chart.

Step 4-identify the Key verse

1. Which verse provides the best summary of the scripture portion you are studying?
2. Write the verse and reference on your chart.

Step 5-Summarise

1. In your own words, summarise what the portion of Scriptures Teaches.
2. Outline the main points covered.
3. Use Chart to summarise the passage.
4. Make a brief summary statement.
5. Paraphrase the passage. Paraphrasing is when you take a verse and summarise it In your own word. Follow the text, but put it in the language today.

6. Ask Questions
    - Who?
    - What?
    - When?
    - Where?
    - Why?
    - How?

Step 6-Pray For Insight on How to Apply the Passage

1. Ask God to help you apply the Scripture you are studying and show you specifically what he wants you to do. You already know that God wants you to do two things: obey his Word and share it with others. In your prayer tell God that you are ready to obey what he will show you and that you are willing to share that application with others.

Method 6-Devotional Bible Read

Step 1-Open Part 4-6 For Deep Work, Deep Study Bible. Then Open Bible. Choose A devotional Book.

1. Amplified Cross-Reference Bible.
2. New Spirit-Filled Life Bible_ Kingdom Equipping Through the Power of the Word.
3. The MacArthur Study Bible, English Standard Version.

Step 2-Record Passage Information

1. **R**ecord the name of the book in which passage you are studying is found.
2. Record chapter and verse number you have selected to study.

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Step 7-Write out an Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.

Step 8-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Step 19-Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times.

1. **Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times.**
   A. **Who?**
   B. **What?**
   C. **Where?**
   D. **When?**
   E. **Why?**
   F. **How?**
   G. **So What?**
   H. **Ask What I do Understand and Find Out What I did not understand.**
   I. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 20-Take Notes.

1. The Blank Sheet

The single biggest change you can make to getting more out of the books you read is using the blank sheet method.

Over the years I've tested multiple approaches and this one works best for simplicity and effectiveness — it will 10x your comprehension overnight.

The blank sheet primes your brain for what you're about to read and shows you what you're learning.

Here's how it works:

1. Before you start reading a new book, take out a blank sheet of paper. Write down what you know about the book / subject you're about to read — a mind map if you will.
2. After you finish a reading session, spend a few minutes adding to the map with a different color.
3. Before you start your next reading session, review the page.
4. When you're done reading, put these 'blank sheets' into a binder that you periodically review.

2. Conventional Notes

Forget the teacher that yelled at you for writing in your book when you were a kid. You bought this thing. It's your property. You need to write in the margins.

Here is a very simple process to take notes while reading:

- At the end of each chapter write a few bullet points that summarize the main idea or specific points. Use your own words and not the authors. Try and connect it to something in your life — a memory or another idea. Also, make note any unanswered questions you had while reading.
- When you're done the book, put it down for a week.
- Pick up the book again and go through all your notes. In a lot of cases, reading your notes will be as good as reading the book again.
- On the inside cover write out the main idea of the book using your own words. If you find yourself stuck, review your notes. (This is called the Feynman Technique). Writing is the process by which we often discover we don't know what we are talking about.
- You can even make a custom index on the back cover with themes or topics.
- (Optional) Copy out the excerpts by hand and put them on the back of your blank sheet from above or type them out and put them into Evernote. Tag accordingly.

3. **Note Taking**

I. Normal note-taking with as much detail as you can.
   - Copy down the information you ordinarily you need to know as you encounter the material.

II. Summarising the information in your own words, clarifying the significance and noting question.
   - Do not repeat the initial note, even if you took your notes in complete sentences.
   - Converting the note to language that helps you understand the meaning is essential.
   - Try to make connection and find relationship within the information.
   - List any questions you have about the notes you have took in step 1.

III. Connecting this particular piece of information to the lesson at large.
   - State any connection you can find between the subject of that note and the broader topic you are studying.
   - Is there any cause and effect relationship with broader topic.

IV. Answering remaining questions and then summarising each distinct page or section again.
   - Revisit, synthesise and transform the information you have learned.

4. Cornell Note Taking

This method of note taking is useful because it enables you to keep track of questions or thoughts that occur to you while making notes. It also allows you to go back and add comments to a page of notes or connect ideas from one source to another.

The Cornell note taking method serves multiple purposes:

- Notes from the lecture or readings, so that you have a record of information you may have forgotten (Details section).
- Summary of what was covered in the lecture or reading which you can easily look through (Summary section).
- A set of key points and/or questions that serve as a mini study guide (Main Ideas section.

Method

During class

- take down information in largest area of the page.
- when instructor moves to new point, skip a few lines.

After class

- complete phrases & sentences as much as possible.
- for all significant information, write cue in left margin.

After writing the notes in the main space, use the left-hand space to label each idea and detail with a key word or "cue“

An example of Cornell Note taking form is below – blank sample follows.

DATE:

IDEA/ Name of the lecture:

Main Ideas and Questions Details

Summary of Notes After Class

Homework For Next Week or Months

Important Information For assignment, Exam or Other

5. Richard Feynman Note Talking Technique

I. **Choose a concept and Write At the TOP Page. Select a topic you're interested in learning about and write it at the top of a blank page in a notebook.**

   A. **Write What You do Know About The Topic or Concept. Write what you know, as if you were explaining to yourself.**

   B. **Write What you Do not Know About The Topic or Concept. You need to be specific. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.**

   C. **What Book Explains the Best About This Topic.**

   D. **You have to start small. You really only have a page (or a few) to fill up with information. You can't fit everything there is to know about "Evolutionary Science" or "Microeconomics" or "Psychology" on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.**

   E. **Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.**

   F. **Actually put the time and effort: Once you have selected the correct set of topics, make sure you actually spend the time and effort to go through the entirety of the techniques. Feynman technique is great for having a basic framework of the topic inside your head with the details chopped off. It's important to get a very clear picture of the basics in your head right - the details can be filled in later.**

G. Make it your own.

- Start with not knowing.
- Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
- Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

H. Take Notes On the Topic From Study.

I. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

J. Don't write notes on notes: Life is short.

II. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

III. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.

B. Simple is beautiful.

C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

E. Go back to the source material, reviewing the parts you don't quite understand yet.

F. Repeat until you have a simple explanation.

IV. **Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.**

V. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, podcast – and fill the gaps in your knowledge.**

VI. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:
B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.
C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

VII. each it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

VIII. Reflect, Refine, and Simplify.

A. **Only when you can explain the subject in simple terms do you** understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

IX. Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.

X. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

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XI. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

6. Flow Chart (More for the Debate, Discussion, Dialogue, Conversation and Communication)

A. Take Notes While the Opposition is speaking In Debate, Dialogue, Conversation and Communication:

- How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.

I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
II. First Left Hand Column Are My Arguments.
III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
IV. Third Left Column are My Responses to the Opponent responses.
V. Fourth Left Hand Column are My Rebuttal.
VI. Fifth Left Hand Column are Opponent Rebuttal.
VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
VIII. Seventh Left Hand Column is the Final My Rebuttal.
IX. Eight Left Hand Column is The opponent Rebuttal.
X. Ninth Left Hand Column is my closing statements.
XI. Tenth Left Hand Column is the opponent closing statements.
XII. Eleventh Left Hand Column is the Cross Examination.

- My Answer.
- Opponent Answer.
- My response to the response of the opponent.

7. Use Cornell Note Taking.

A. **Name.**
B. **Date.**
C. **Class and Period.**
D. **Topic.**
E. **Essential Question at the Top of Page.**
F. **Questions and Main Ideas on the Left Page of the Blank Page.**
G. **Notes On the Right Page of the Blank Page.**
H. **Summary at the bottom of the page.**

8. **Analytical Learners: Outline/ List. Good Works well for recording terms, definitions, facts and sequences.**

9. **Sentence Method: The goal is to jot down your thoughts as quickly as possible. Works well in meetings or lectures that lack organization. Use when information is being presented very quickly.**

10. **SQ3R (Survey, Question, Read, Recite, Review). Use for dense readings (like business books, text books, whitepapers, etc.). You start the process by skimming the material for bolded text, images, diagrams and summaries in order to produce a list of headlines or main topics.**

11. **Mapping. Mapping is a nonlinear system of note-taking that resembles a tree and root structure. Ideas stem from one major concept and are connected by lines (or "branches"). As a note-taking system, mapping works particularly well for visual learners, but it can also be a great tool for analytical-thinkers who have trouble brainstorming because it allows you to make connections you'd otherwise miss with a linear format. Works well for planning essays, recording meetings. Use for big-picture brainstorming sessions.**

12. **Smart Wisdom. It's a tool optimised for active listening in lecture situations. Instead of taking notes in full sentences, you record only keywords and place them in a chain that maps the thought process.**

13. **Diagram And Processes. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

14. **Diagram And Processess. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

15. **Charting. Charting is a great note-taking strategies when you need to compare and contrast ideas. The most widely used charting method is the Pro and Con list.**

16. CERC.

A. **Claim.**
B. **Evidence.**
C. **Reasoning.**
D. **Conclusion.**

17. Use Smart Notes.

A. **What is big Idea.**
B. **Question.**
C. **Evidence.**
D. **Conclusion.**

Step 21-Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-1000Times.Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.

1. **Step 1-Ask Question. While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times.**
   - **A. Who?**
   - **B. What?**
   - **C. Where?**
   - **D. When?**
   - **E. Why?**
   - **F. How?**
   - **G. So What?**
   - **H. Ask What I do Understand and Find Out What I did not understand.**

Step 22 - Basic Exploration, Experimentation and Practice :)

1. Basic Exploration, Experimentation and Practice.

I. The primary goal here is to simply explore based on your instincts without attempting to achieve any particular purpose. The experimentation is obviously with respect to the particular module you are focusing.

II. If your modules focus on some technology-orientated topic, then in this step you play around with different software to familiarise yourself with these different tools to understand ways in which they functions.

III. If your topic is something more theoretical, then you would need to ponder what exactly you want to learn about and then form some hypotheses about how those concepts or process manifest themselves, and the best way you can start learning them.

IV. The goal of this step is to stipulate (demand) our mind to start asking the right questions about our modules. These questions will be most important outcome of this step.

V. This step entails answering the questions you came up with in the previous step.

VI. In this steps you will attempt to answer at least some of these questions if not all of them. For this, you would need to revisit the various resources you aggregated earlier and use them to first, answer all the questions you came up. Second to acquire as much knowledge as you can. Continue this process until you believe you have learned enough about this specific module.

VII. You would need to go back and forth between learning new things and applying them practically to reinforce your newfound knowledge.

VIII. Split time between learning and practical application.

IX. Experiment on trial and error.

X. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 23 - Take Notes.

1. The Blank Sheet

The single biggest change you can make to getting more out of the books you read is using the blank sheet method.

Over the years I've tested multiple approaches and this one works best for simplicity and effectiveness — it will 10x your comprehension overnight.

The blank sheet primes your brain for what you're about to read and shows you what you're learning.

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- When you're done the book, put it down for a week.
- Pick up the book again and go through all your notes. In a lot of cases, reading your notes will be as good as reading the book again.
- On the inside cover write out the main idea of the book using your own words. If you find yourself stuck, review your notes. (This is called the Feynman Technique). Writing is the process by which we often discover we don't know what we are talking about.
- You can even make a custom index on the back cover with themes or topics.
- (Optional) Copy out the excerpts by hand and put them on the back of your blank sheet from above or type them out and put them into Evernote. Tag accordingly.

3. **Note Taking**

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II. Summarising the information in your own words, clarifying the significance and noting question.
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- Summary of what was covered in the lecture or reading which you can easily look through (Summary section).
- A set of key points and/or questions that serve as a mini study guide (Main Ideas section.

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- for all significant information, write cue in left margin.

After writing the notes in the main space, use the left-hand space to label each idea and detail with a key word or "cue“

An example of Cornell Note taking form is below – blank sample follows.

DATE:

IDEA/ Name of the lecture:

Main Ideas and Questions Details

Summary of Notes After Class

Homework For Next Week or Months

Important Information For assignment, Exam or Other

5. Richard Feynman Note Talking Technique

I. **Choose a concept and Write At the TOP Page. Select a topic you're interested in learning about and write it at the top of a blank page in a notebook.**

   A. **Write What You do Know About The Topic or Concept. Write what you know, as if you were explaining to yourself.**

   B. **Write What you Do not Know About The Topic or Concept. You need to be specific. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.**

   C. **What Book Explains the Best About This Topic.**

   D. **You have to start small. You really only have a page (or a few) to fill up with information. You can't fit everything there is to know about "Evolutionary Science" or "Microeconomics" or "Psychology" on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.**

   E. **Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.**

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- Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
- Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

H. Take Notes On the Topic From Study.

I. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

J. Don't write notes on notes: Life is short.

II. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

III. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.

B. Simple is beautiful.

C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

E. Go back to the source material, reviewing the parts you don't quite understand yet.

F. Repeat until you have a simple explanation.

IV. **Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.**

V. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, podcast – and fill the gaps in your knowledge.**

VI. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:
B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.
C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

VII. Tach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

VIII. Reflect, Refine, and Simplify.

A. **Only when you can explain the subject in simple terms do you** understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

IX. Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.

X. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

XI. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

6. Flow Chart (More for the Debate, Discussion, Dialogue, Conversation and Communication)

A. Take Notes While the Opposition is speaking In Debate, Dialogue, Conversation and Communication:

- How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.

I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
II. First Left Hand Column Are My Arguments.
III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
IV. Third Left Column are My Responses to the Opponent responses.
V. Fourth Left Hand Column are My Rebuttal.
VI. Fifth Left Hand Column are Opponent Rebuttal.
VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
VIII. Seventh Left Hand Column is the Final My Rebuttal.
IX. Eight Left Hand Column is The opponent Rebuttal.
X. Ninth Left Hand Column is my closing statements.
XI. Tenth Left Hand Column is the opponent closing statements.
XII. Eleventh Left Hand Column is the Cross Examination.

- My Answer.
- Opponent Answer.
- My response to the response of the opponent.

7. Use Cornell Note Taking.

A. **Name.**
B. **Date.**
C. **Class and Period.**
D. **Topic.**
E. **Essential Question at the Top of Page.**
F. **Questions and Main Ideas on the Left Page of the Blank Page.**
G. **Notes On the Right Page of the Blank Page.**
H. **Summary at the bottom of the page.**

8. **Analytical Learners: Outline/ List. Good Works well for recording terms, definitions, facts and sequences.**

9. **Sentence Method: The goal is to jot down your thoughts as quickly as possible. Works well in meetings or lectures that lack organization. Use when information is being presented very quickly.**

10. **SQ3R (Survey, Question, Read, Recite, Review). Use for dense readings (like business books, text books, whitepapers, etc.). You start the process by skimming the material for bolded text, images, diagrams and summaries in order to produce a list of headlines or main topics.**

11. **Mapping. Mapping is a nonlinear system of note-taking that resembles a tree and root structure. Ideas stem from one major concept and are connected by lines (or "branches"). As a note-taking system, mapping works particularly well for visual learners, but it can also be a great tool for analytical-thinkers who have trouble brainstorming because it allows you to make connections you'd otherwise miss with a linear format. Works well for planning essays, recording meetings. Use for big-picture brainstorming sessions.**

12. **Smart Wisdom. It's a tool optimised for active listening in lecture situations. Instead of taking notes in full sentences, you record only keywords and place them in a chain that maps the thought process.**

13. **Diagram And Processes. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

14. **Diagram And Processess. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

15. **Charting. Charting is a great note-taking strategies when you need to compare and contrast ideas. The most widely used charting method is the Pro and Con list.**

16. CERC.

A. **Claim.**
B. **Evidence.**
C. **Reasoning.**
D. **Conclusion.**

17. Use Smart Notes.

A. **What is big Idea.**
B. **Question.**
C. **Evidence.**
D. **Conclusion.**

PART 4: Rules of Reading For Bible Study, Deep Work, Deep Study And Powerful Goodness.

Step 24-Decide The Rules of Reading For Bible Study Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method.

1. **Decide The Rules of Reading For Bible Study, Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method.**
    - **I. Method 1-Chapter Summary Method.**
    - **II. Method 2-Character Quality Method.**
    - **III. Method 3-Thematic Method.**
    - **IV. Method 4-Biographical Method.**
    - **V. Method 5-Topical Method.**
    - **VI. Method 6-Word Study Method.**
    - **VII. Method 7-Book Background Method.**
    - **VIII. Method 8-Book Survey Method.**
    - **IX. Method 9-Chapter Analysis Method.**
    - **X. Method 10-Paragraph Study.**
    - **XI. Method 11-Verse by Verse Analysis Method.**
    - **XII. Method 12-Book Synthesis Method.**
    - **XIII. Method 13-Theological Study Method.**
    - **XIV. Method 14-Studying Bible Prophecy.**
    - **XV. Method 15-Typological Study Method.**
    - **XVI. Method 16- John MacArthur Way Bible Study.**
    - **XVII. Method 17-Inductive Bible Study Method.**
    - **XVIII. Method 18-BIBLICAL HERMENEUTICS.**
    - **XIX. Method 19-Theological Group of Principles.**
    - **XX. Method 20- How To Read A Book.**

Step 25-How Many Pages Read A Day.

1. **Step 1-How Many Pages Read A Day.**
    I. **Read no more than 2-25 pages a day, and do The Work Required to Have an Opinion on Any Topic and Anything.**
    II. **The ideal is not merely to read or Listen faster, but to read or Listen at different speeds, and to know when the different speeds are appropriate.**

Step 26-Do Not Speed Read.

1. Do Not Speed Read.

I. **Don't fool yourself.** While reading is the key to getting smarter, speed reading is just a fancy way of fooling yourself into thinking you're learning something. In reality Speed reading is just turning pages quickly.

II. **Reading fast is not thinking.** If you're reading fast you're not thinking and challenging what you're reading. You're not being critical. You're not making connections with existing knowledge. You're not arguing with the author. You're not reading something at the edge of your cognitive ability. All of that is work. And if you're not doing the work, you're only walking away with surface knowledge. Reading is mentally demanding.

III. **Reading fast is worse than not reading.** Reading fast gives you two things that should never mix: surface knowledge and overconfidence. And that's a recipe for really bad decisions. Bad decisions reduce the free time we have. After all, we have to run around fixing all of these mistakes.

IV. **Visible costs get attention, invisible ones don't.** Most people choose the path of low upfront visible costs and high visible costs later. If you're willing to incur the cost of reading correctly and appropriately (it takes more time than speed reading), you get a massive benefit later. If you speed-read, you're incurring invisible costs that show up later in your lack of real understanding. Ignorance is more expensive than investing the time necessary to get smarter.

V. **There's a better solution, anyways.** Learning what a good book really looks like, and learning how to skip the bad ones, is a far more robust time saver than speed-reading. Hope your radar for a great book, be a little ruthless about culling and quitting the weak. Don't waste time reading.

VI. **Most people want to create the impression they read**. That they have unique insights. That they know what they're talking about. In the end however, when it comes to doing the work, they walk away. That's why there is so much value in reading. Do the work.

VII. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process Of Reading.**

Step 27-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 28-Isolating Myself For Deep Study, Deep Work AND Decide The Study or Work Philosophy

1. **Listen and Apply Book on Deep Book and Power of Habits.**
    I. 7 Habits of Highly Effective Families.
    II. Atomic Habit by James Clear.
    III. Deep Work by Cal Newport.
    IV. The Power of Habit_ Why We Do What We Do in Life and Business.
    V. The Ultimate Focus Strategy_ How to Set the Right Goals, Develop Powerful Focus, Stick to the Process, and Achieve Success.
    VI. Tools of Titans by Tim ferris.

2. **Create Physical and Mental Space For Isolated Work.**
    I. Collaboration doesn't just happen online or over digital tools. And while most knowledge workers spend their days in open offices designed to create more interaction and collaboration. In reality, they rarely do that. Rather than increase our face-to-face interactions, open offices have been found to decrease them by up to 70%.
    II. If you work at home or remotely, you're not completely safe from this issue either. Yes, you need a physical space devoid of distractions to do focused work. But you also need to create mental space as well. This means getting over the feeling of needing to "catch up" and always be around on Slack and IM.
    III. To stay "bursty" try to only check in at specific times. That way your team knows when you're available and you can schedule your deep work around those periods.
    IV. To be the best collaborator possible, you need to balance between being around and being heads down. And according to the research, there are few better ways to do that then bringing a bit of "burstiness" into your day.

3. Power of Intermittent Isolation For Deep Study and Deep Work.

I. We're actually more productive, efficient, and creative when we follow the lead of the ants and work "intermittently" rather than trying to be "always on." Especially when it comes to complex problem-solving.

II. The isolated time helps to come up with the most creative ideas, and then came together as a group to explain, learn from each other, and narrow in on the highest-quality ones to present, I am working In the group.

III. **We all do better work when we have time for both collaboration and private creative thinking**.

IV. Constant communication—especially over tools like Slack and instant messengers—actually decrease both our productivity and creativity.

V. Researchers looking at the productivity of remote teams found that those who practiced a "bursty" style of communication—rapid periods of collaboration followed by long periods of silence—were the most successful.

VI. "During a rapid-fire burst of communication, team members can get input necessary for their work and develop ideas. Conversely, during longer periods of silence everyone is presumably hard at work acting upon the ideas that were exchanged in the communication burst."

4. Decide and Write Study Philosophy I Will Use For Today.

I. Monastic Philosophy. The monastic philosophy involves cutting out all shallow activities to focus on deep work. This is a rather radical approach that focuses entirely on deep work and nothing else for weeks or months on end.

II. Bimodal Philosophy. The bimodal philosophy involves splitting your schedule based on the amount of work. This would look like an individual spending at least a day or weeks on deep work, and once that is completed, the individual will focus on only shallow work. If you do this approach on a weekly basis, you could try to do all your deep work during weekdays, and your shallow work such as responding to emails, using social media, etc. on the weekends.

III. Rhythmic Philosophy. The rhythmic strategy involves doing deep work as a daily habit. While the time of day you do your deep work each day doesn't matter, it's essential that if you choose this strategy, you stick with it. Time blocking certain hours, about 1 to 4 hours each day, to complete your deep work tasks is key. For example, Time blocking from 12 P.M. to 4 P.M. to do all your deep work tasks.

IV. **Journalistic Philosophy.** Journalistic strategy involves trying to do deep work whenever it fits into your schedule. This is extremely difficult to do. This is because constantly switching from deep to shallow work efficiently is hard and oftentimes only works for those who are more experienced with deep work.

Step 29-The Power of Concentration

I. **Listen and Apply the following book-*The Ultimate Focus Strategy_ How to Set the Right Goals, Develop Powerful Focus, Stick to the Process, and Achieve Success.***

II. **The core of mindfulness is the ability to pay attention. That's exactly what Holmes does when he taps together the tips of his fingers, or exhales a fine cloud of smoke. He is centering his attention on a single element. And somehow, despite the seeming pause in activity, he emerges, time and time again, far ahead of his energetic colleagues.**

III. **That's the thing about mindfulness. It seems to slow you down, but it actually gives you the resources you need to speed up your thinking.**

IV. **All of humanity's problems stem from man's inability to sit quietly in a room alone."**

V. **Step In Concentration**

   A. **Eliminate distractions. How do we focus better if we are always bombarded with information? Make a practice to block time in your schedule to do a specific task or activity. During this time, request that you be left alone or go to a place where others are unlikely to disturb you: a library, a coffee shop, a private room.**

      Close social media and other apps, silence notifications, and keep your phone hidden from sight in a bag or backpack. As described in HBR, researchers found that cognitive capacity was significantly better when the phone was out of sight, not just turned off. Keep Your primary focus is to complete what you need to do. Shutting off both internal and external disturbances can help you to concentrate.

   B. **Reduce multitasking. Attempting to perform multiple activities at the same time makes us *feel* productive. It's also a recipe for lower focus, poor concentration, and lower productivity. And lower productivity can lead to burnout. Examples of multitasking include listening to a podcast while responding to an email or talking to someone over the phone while writing your report. Such multitasking not only hampers your ability to focus but compromises your work quality.**

C. **Practice mindfulness and meditation. Meditating or practicing mindfulness activities can strengthen well-being and mental fitness and improve focus. During the meditation process, our brain becomes calmer and our whole body becomes more relaxed. We focus on our breath during the process so that we will not be distracted by our minds. With practice, we can learn to use our breath to bring our attention back to a particular task so that it can be done well even if we get interrupted. Steps in Mindfulness**

   A. **Step 1: Breathe In Deeply, And Breathe Out Slowly, Letting Yourself Relax.**
   B. **Step 2: Gently Ask Your Mind To Keep Aside All Your Worries And Concerns.**
   C. **Step 3: Bring More Awareness Into Breathing, Feeling It With Your Senses.**
   D. **Step 4: Start Counting Your Breaths Slowly. Bring Your Mind Back If It Wanders.**
   E. **Step 5: Get Immersed In The Present, Losing Consciousness Of Your Surroundings.**
   F. **Step 6: Accept The Thoughts And Emotions Moving Across Your Mind Just As They Are.**

G. **Get more sleep. Many factors affect your sleep. One of the most common is reading from an electronic device like a computer, phone, or tablet or watching your favorite movie or TV show on an LED TV just before bedtime. Research has shown that such devices emit light towards the blue end of the spectrum. Such light will stimulate your eye retina and prevent the secretion of melatonin that promotes sleep anticipation in the brain. Use a filter or "blue light" glasses to minimize such blue light or avoid all electronic devices before bed. Other ways to improve sleep include avoiding exercise late in the day, staying hydrated throughout the day, using journaling or breathing exercises to quiet the mind, and creating a predictable bedtime routine and schedule.**

H. **Choose to focus on the moment. It might feel counterintuitive when you feel unable to concentrate, but remember that you choose where you focus. It's tough to concentrate when your mind is always in the**

past and worrying about the future. While it isn't easy, make an effort to let go of past events. Acknowledge the impact, what you felt, and what you learned from it, then let it go. Similarly, acknowledge your concerns about the future, consider how you are experiencing that anxiety in your body, then choose to let it go. We want to train our mental resources to focus on the details of what matters at the moment. Our minds go in the direction we choose to focus.

I. Take a short break. This also might seem counterintuitive, but when you focus on something for a long time, your focus may begin to die down. You may feel more and more difficulty devoting your attention to the task. Researchers have found that our brains tend to ignore sources of constant stimulation. Taking very small breaks by refocusing your attention elsewhere can dramatically improve mental concentration after that. The next time you are working on a project, take a break when you begin to feel stuck. Move around, talk to someone, or even switch to a different type of task. You will come back with a more focused mind to keep your performance high.

J. Connect with nature. Research has found that even having plants in office spaces can help increase concentration and productivity, as well as workplace satisfaction and better air quality. Finding time to take a walk in the park or appreciating the plants or flowers in your garden can boost your concentration and help you feel refreshed.

K. Train your brain. Scientific research is starting to amass evidence on the ability of brain training activities to enhance cognitive abilities, including concentration, in adults. Such brain training games can also help you develop your working and short-term memory, as well as your processing and problem-solving skills. Examples of such games include jigsaw puzzles, sudoku, chess, and brain-stimulating video games.

L. Exercise. Start your day with simple exercise and get your body moving. According to the May 2013 issue of the Harvard Men's Health Watch, regular exercise releases chemicals key for memory, concentration, and mental sharpness. Other research found that exercise can boost the brain's dopamine, norepinephrine, and serotonin levels and all these will affect focus and attention.

Individuals who do some form of exercise or sports perform better on cognitive tasks when compared with those who have poor physical health. Physical movement helps relax the muscles and relieve tension in the body. Since the body and mind are so closely linked, when your body feels better so, too, will your mind.

M. Listen to music. Music has been shown to have therapeutic effects on our brains. Light music may help you to concentrate better, but some music may distract you. Experts generally agree that classical music and nature sounds, such as water flowing, are good choices for concentration while music with lyrics and human voices may be distracting. Multiple apps and services offer background music and soundscapes designed for different types of focus and work needs.

N. Eat well. Choose foods that moderate blood sugar, maintain energy, and fuel the brain. Fruits, vegetables, and high-fiber foods can keep your blood sugar levels even. Reduce sugary foods and drinks that cause spikes and dips in your sugar levels make you feel dizzy or drowsy.

Your brain needs lots of good fat to function properly. Nuts, berries, avocados, and coconut oil are all great ways to get healthy fats into your diet and help your brain run more smoothly. The science on Research has found that foods like blueberries can boost concentration and memory for up to 5 hours after consumption due to an enzyme that stimulates the flow of oxygen and blood to the brain, helping with memory as well as our ability to focus and learn new information. Leafy green vegetables such as spinach contain potassium which accelerates the connections between neurons and can make our brain more responsive.

O. Set a daily priority. Write down what you want to accomplish each day, ideally the night before, and identify a single priority that you commit to accomplishing. This will help focus your brain on what matters, tackling the big jobs first and leaving the small stuff till later. Break large tasks into smaller bytes so that you will not be overwhelmed. Identifying true priorities can help relieve distracting anxiety, and achieving small daily goals can wire your brain to achieve success.

P. **Create space for work. Create a calm, dedicated space for work, if possible. Not everyone can have a well-appointed office, but desk organizers, noise-canceling headphones, an adjustable monitor, and adjustable lighting can help. Clear clutter out of sight, make it as ergonomic and comfortable as possible, and try to keep your space neat and ventilated.**

Q. **Use a timer. Train your brain to hyper-focus on a task by using a timer or phone alarm. First, decide what task you want to complete. Set your timer for 20 minutes (generally not more than 30 minutes) and concentrate on the task. When the alarm rings take a short break for 5 minutes. You can either take a walk and do some stretching exercise, then reset the timer and start again. This technique has shown to be effective to improve your concentration.**

R. **Switch tasks. While we may want to concentrate on a particular task, sometimes we get stuck and our brain needs something fresh to focus on. Try switching to other tasks or something you love to do. Switching tasks can help you stay alert and productive for a longer period.**

Step 30-You Are Required To Do The Work to Have an Opinion on Any Topic.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. Do Not Have the Opinion and do not make any judgement about Anything, I see and hear, If I did not work Hard to have an opinion. I need to Read, Analyse, Research the topic from every angle, so that I can have an opinion or Make Judgement on the topic.
4. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.
5. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”
6. Do not read the newest books, but the great books of western world, stoic and classics, as these books stood the test of time.

7. **How Long Does it Take To Prepare:**
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

8. **Before Preparation.** The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

9. **Preparation**:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, bu question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading, deductive and inductive methodology..
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

10. **Compound Knowledge**- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

11. The Art of Anticipation of Objections.

A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
D. Use Think, Logic, Strategem, Thinking models.
E. Write.
F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

12. When Dialogue, Discussion, Debate Takes A Place.

A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.

- Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
- Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
- Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 31-Use The Chosen Rules of Reading Method For Bible Study, Deep Work And Follow Each Steps Of The Method Until Finish All Steps,

And Follow Each Steps As many Times As I Want, While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.

SLOW READING- COMPLEX

TEXT-Bible Study, Deep Work, Deep Study

Method 1-Chapter Summary Method

Step 1-Tools Required for this Method

1. Cross Reference.
2. Treasure Scripture Knowledge.
3. BOOK
4. Read it in a Bible without notes. If you try using this method by reading a Bible in which you have made notes, you will have the tendency to concentrate on the same ideas. Let God speak to you in a fresh way and give you new insights.
5. Read it without stopping. During your first few readings, don't stop in the middle of a chapter, but read it from start to finish. Your goal is to feel the flow of the chapter, so don't be concerned with the details at the outset. Try to capture the central message and the writer's overall theme.
6. Read it in several different contemporary translations. This will give you additional insights as you see how each translator rendered the original writing. Make notes on the interesting differences you find.
7. Read it aloud quietly to yourself. If you have a problem with concentration, this will help tremendously because you will be hearing yourself read. Many people have found that reading aloud helps them better focus their attention on the text.

Step 2-Select A chapter Title

1. Record on chapter study chart the name of the book and chapter number you are studying.
2. Read the entire chapter and give it a title which reflects its content.

Step 3-Mark Paragraph Divisions

1. Mark the paragraph division within chapter.
2. If your Bible or Books has neither paragraph marks or bold face marking then you must determine the paragraph division your ourself.
3. Mark the paragraph division in you Bible by drawing a circle around the verse number where each paragraph begins.

Step 4-Create a Chapter Study Chart

1. On the chapter study Chart record the title of the chapter.
2. List the verse of the paragraph division.
3. Give each paragraph a title which reflects the content of that paragraph.
4. Use the column with the headings to record your thoughts about the relation between parts of the chapter.

Step 5-Create A Chapter Outline

1. Use paragraph divisions and paragraph titles for the main points.
2. Select sub-points and outline the verses in each paragraph of the chapter.
3. Record the verse number by points and sub-points.
4. Include any other Bible references which relate to the subject and explain it more fully.
5. If the number of the paragraphs exceeds the space on the chapter 📖 form use additional forms.

Step 6-Content

1. Describe, summarise, paraphrase, outline, or make a list of the major points in a chapter. The method you choose will depend on the literary style of the chapter and on your own preference. Some people like to summarise; analytical people enjoy outlining. Choose the method with which you feel most comfortable and is easy for you to do. Don't try to interpret the chapter; just make observations on its contents. Record on your form what you feel the writer said.

Step 7-What Is Immediate Context of The Chapter?

Step 8- What Are The Facts Within Context Provided in The Chapter?

Step 9-Chief People

1. List the most important people in the chapter. Ask questions such as, Who are the main people in this chapter? Why are they included? What is significant about them? If the chapter contains pronouns (he, she, they, etc.) you may have to refer to the previous chapter to identify the people. Write down your reasons for choosing certain people as the chief ones of the chapter. When you come to long genealogies (lists of people), don't try to list each one, but summarise the list.

Step 10-Choice verse

1. Choose a verse that summarises the whole chapter or one that speaks to you personally. In some chapters you may find a key verse that summarises the writer's argument; in other chapters there may not be a key verse. On occasion you may want to pick a verse from which you will be writing your application, a verse that you believe God would have you apply to your life.

Step 11-Crucial Word/Words

1. Write down the key word or words of the chapter. Many times the key word will be the one that is used most frequently ("love" in 1 Corinthians 13 and "faith" in Hebrews 11). Sometimes the crucial word may be the most important word but not the most used one. In Romans 6, for example, the word "count" (kjv , "reckon") is the important word even though it is used only once (Rom. 6:11). Also, a chapter may have more than one crucial word.

Step 12-Challenges

1. List any difficulties you may have with the passage. Are there any statements you do not understand? Is there any problem or question you would like to study further? Often while doing a chapter summary you will get ideas for other types of studies you may want to do in the future. For instance, a certain word in the chapter may catch your attention. Take note of that word; later you may want to do an in-depth study of it (see chapter 7). A question about a doctrinal matter might motivate you to do a topical study on that particular teaching.

Step 13-Cross references

1. Using the cross-references in your study Bible, look up other verses that help clarify what the chapter is talking about and list them on your form. Ask the question, What else in the Bible helps me understand this chapter? Cross-references are important because they are helpful tools in interpreting the meaning of a chapter; they enable you to see what the Bible as a whole has to say on any given teaching. You can look for several types of cross-references, and these are described in the section on correlation in the Chapter Analysis Method (see chapter 10) and in chapter 10 of Walter A. Henrichsen and Gayle Jackson's book Studying, Interpreting, and Applying the Bible.

Step 14-Christ Seen

1. The entire Bible is a revelation of the person of Jesus Christ. In fact, Jesus used the Old Testament to teach his disciples about himself. On the day of resurrection on the Emmaus road, Jesus taught two of his disciples: "Beginning with Moses and all the Prophets, he explained to them what was said in all the Scriptures concerning himself" (Luke 24:27). As you study each chapter, be alert for statements that tell you something about Jesus Christ, the Holy Spirit, or God the Father. Ask yourself, What can I learn about the nature of Jesus from this chapter? What attributes of God in Christ are illustrated here? (Some examples: his love, justice, mercy, holiness, power, and faithfulness.) This step may be the most difficult to complete in some portions of the Bible, particularly in Old Testament narratives and in passages where symbolism is used.

Step 15-Central Lesson/Lessons

1. Write down the major principles, insights, and lessons you learn from this chapter. Ask yourself, Why does God want this passage in the Bible? What does he want to teach me from this chapter? What is the central thought the writer is trying to develop? A possible answer might be "We should be loving in all interpersonal relationships" (1 Cor. 13).

Step 16-Conclusion

1. This is the application portion of your study. As discussed in chapter 1, develop a project to help you implement in your life a lesson you have learned from the chapter or portion. It will benefit you to conclude your chapter summary by asking yourself two questions: (1) How do these truths apply to me personally and (2) What specifically am I going to do about them?

Step 17-What Further Analysis I Need To Do, Next Time?

Step 18-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a Book, bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 2-Character Quality Method

Step 0-List of the Positive and Negative Characters Quality

1. **Positive Characteristics to Look for in a Person.**
    - Honesty
    - Integrity
    - Dependability
    - Loyalty
    - Dedication
    - Faithfulness
    - Trustworthiness
    - Sincerity
    - Diligence
    - Orderliness
    - Righteousness
    - Fairness
    - Obedience
    - Courteousness
    - Respectfulness
    - Reverence
    - Deference
    - Gratefulness
    - Thankfulness
    - Wisdom
    - Discernment
    - Sensitivity
    - Perspective
    - Discreetness
    - Carefulness
    - Cautiousness
    - Discipline
    - Thriftiness
    - Good Stewardship

- Resourcefulness
- Observer
- Industry
- Creativity
- Enthusiasm
- Positiveness
- Lovingness
- Kindness
- Patience
- Self-denying
- Self-giving
- Sacrificing
- Compassionate
- Meekness
- Sympathy
- Generosity
- Forgiveness
- Gentleness
- Mercifulness
- Peacemaking
- Submissiveness
- Agreeableness
- Considerateness
- Self-control
- Wholeheartedness
- Determinate
- Stableness
- Energy
- Zealousness
- Earnestness
- Balance
- Moderateness
- Chasteness
- Pureness
- Cleanliness

- Modesty
- Cheerfulness
- Optimism
- Confidence
- Boldness
- Courageousness
- Man of Faith
- Bravery
- Durableness
- Humbleness
- Calmness
- Quietness
- Independence
- Tolerance
- Contentedness
- Uncomplaining
- Flexibleness
- Uncompromising
- A Servant
- Sense of Humour
- Characterised by theBeatitudes

2. Negative Characteristics and Sins to Look for in a Biographical Study

- A liar
- Unfaithful
- Unreliable
- Libelous
- Slanderer
- Gossiper
- Backbiter
- Compromising
- Flatterer
- Lazy
- A Sluggard
- Shallow
- Hypocritical
- Crafty/Sly
- Deceitful
- Dishonest
- Unfair
- Insulting
- Coarse
- Rude/Gross
- Impolite
- Rebellious
- A Busybody
- Tyrannical
- Disobedient
- Ungrateful
- Murmurer
- Shortsighted
- Lukewarm
- Halfhearted
- Foolish
- Talkative
- Idolatrous
- Careless

- Forgetful
- Wasteful
- Cruel
- Inhuman
- Selfish
- Malicious
- Unkind
- Insensitive
- Negligent
- Callous
- Prejudiced
- 261
- Unforgiving
- Harsh
- Unsociable
- Grudging
- Annoying
- Irritating
- Indifferent
- Apathetic
- Idle
- Cowardly
- A Cop-out
- Impulsive
- Humorless
- Fickle
- Double-minded
- Wavering
- Headstrong
- Proud
- Conceited
- Stubborn
- Boastful
- Sensual
- Immodest

- Gluttonous
- A Drunkard
- Reprobate
- Immoral
- Unclean
- Adulterous
- Fornicator
- Covetous
- Greedy
- Stingy
- Fearful
- Arrogant
- Dogmatic
- Vain
- Jealous
- Envious
- Sarcastic
- Scornful
- Blasphemous
- Bitter
- Violent
- Complaining
- Procrastinator
- Argumentative
- Disrespectful
- Manipulative
- Bigoted
- Worldly
- A Worrier
- Rejoices in Evil
- Lusts for Power
- Self-righteous
- Undisciplined
- Apostate
- Fears Men

- Presumptuous
- Profane
- Legalistic
- Doctrinally Off
- Friend of the World
- Angry without Cause
- Ashamed of Christ
- A Doubter
- Independent Spirit
- Loves Men’s Praise
- Forgets God

Step 1-Tools Required for this Method

1. Book
2. Study Bible
3. An Exhaustive Concordance
4. The Building of Character by J. R . Miller (AMG Publishers)
5. Character Sketches, 2 volumes (Institute of Basic Life Principles)
6. The Master Bible, edited by J. Wesley Dickson (J. Wesley Dickson & Co.)
7. The Measure of a Man by Gene Getz (Regal Books)
8. The Measure of a Woman by Gene Getz (Regal Books)
9. Bible Dictionary
10. Word Study Book
11. Topical Bible
12. Cross Reference
13. Treasure Scripture Knowledge
14. An English dictionary
15. Only work on one quality at a time. Don't try to work on two or three or more, for it takes concentrated effort to see how that one quality applies to every area of your life. It is far better to build one quality solidly into your life than to work on several weak ones.
16. Don't rush it! Character development takes time. Even though one of the steps is writing out an illustration after one week, you should probably want to work on one quality for a much longer time. I have found in my own life that God works on an area for months (sometimes years) before it becomes part of my daily walk with him.
17. Stay with that one quality until you get victory in that specific area. Don't skip around, trying to work on many qualities, when you need victory in that one. Remember that the quality of diligence is one you want to work on.
18. Be alert to a negative quality in your life that is actually a positive one being misused. Realise that the Lord wants to turn your weak points into strong ones. If you are rigid, legalistic, and unbending, it might be that the quality of self-discipline is being misused. That discipline needs to be tempered with compassion and concern for others.
19. Trust the Holy Spirit to build these qualities in your life. In the final analysis, it is God's power in you that reproduces the fruit of the Spirit in your life. It is God alone who can change your character. "For it is God who works in you to will

and to act according to his good purpose" (Phil. 2:13). So let God do it, trusting the Holy Spirit to work in your life.

Step 2 Name the Quality

1. Select the quality you want to study and write it down. Then look it up in an English dictionary and jot down the definition of that word or concept. List any synonyms or related words that help you understand this quality.

Step 3-Name the Opposite Quality

1. Write down the opposite quality — the antonym — of the one you are studying, and write out its dictionary definition and similar words. If you can't think of the opposite, use a dictionary of antonyms; some thesauruses also give antonyms. For example, unfaithfulness is the opposite of faithfulness. But in some qualities you might be studying, there might be two or more opposites. For example, you could have the following:
   - Faith and doubt.
   - Faith and apathy.
   - Faith and fear.

Step 4-Do a Simple Word Study

1. Look up the definition of the quality you are studying. Find the ways it is used in the scriptural contexts; then check a Bible dictionary, encyclopaedia, or word study book for the way the quality was used in biblical times and in the Scriptures. Some of the tools will tell you how many times the word is used in the Bible, each testament, the writings of different authors, and in the book you are studying. For example, if you were studying the quality of meekness, you would discover that the word meek in the original Greek meant "breaking something and bringing it under submission." The word was used to describe the training of valuable horses, which were brought under submission to their masters. A stallion would still have all the power and strength of its wild days, but it was now under its master's control. Meekness, therefore, is not weakness. As a Christian character quality, meekness is strength that is in submission to Jesus Christ.

Step 5-Find Some Cross References

1. Using cross-references will give you additional insights from other portions of the Bible. Scripture is still the best interpreter of Scripture. Use your concordance and topical Bible to find all the verses you can relating to this quality. Look up the word and its synonyms in the concordance and topical Bible, write the cross-reference on the form in the appropriate section, and give a brief description of that verse. Then ask some of the following questions about the quality you are studying as you meditate on the cross-reference verses:
   - What are the benefits this trait can bring me?
   - What are some bad consequences this trait can bring me?
   - What are benefits this trait can bring to others?
   - What are some bad consequences this trait can bring to others?
   - Is there any promise from God related to this trait?
   - Is there any warning or judgment related to this trait?
   - Is there a command related to this trait?
   - What factors produce this trait?
   - Did Jesus have anything to say about this quality? What?
   - What writer talked about this quality the most?
   - Is this trait symbolised by anything in Scripture? Is that significant?
   - Is this trait listed with a group of qualities? What is the relationship between them? What does this suggest?
   - What Scriptures tell me directly what God thinks of this trait?
   - Do I want more or less of this trait in my life?
2. After asking a series of questions such as these, or others that you think of, you might write a brief summary of the Bible's teaching on this quality. You may list any lessons or principles that you learned from this mini-topical study, or you may paraphrase a few key verses on this trait. Always be sure to write down any difficulties you have with the verses you looked up, or questions you would like to see answered. Possibly, later on you will understand what is difficult at present and then find answers to your problems; often one verse sheds light on another verse you have studied.

Step 6-Do a Brief Biographical Study

1. Now go back to your Book or Bible and try to find at least one person (more if possible) who showed this character quality in his or her life. Briefly describe this quality and write down the Scriptures that refer to it. Ask these questions as you do this part of the study:
    - What shows this quality in his/her life?
    - How did this quality affect his/her life?
    - Did the quality help or hinder his/her growth to maturity? How?
    - What results did it produce in his/her life?
2. An example of this step may be seen in the life of Joseph, the son of Jacob, who displayed different qualities of the fruit of the Spirit (Gal. 5:22 – 23) in each incident in his life. It is interesting to note his testimony before the heathen: "So Pharaoh asked them, 'Can we find anyone like this man, one in whom is the spirit of God?'" (Gen. 41:38). We find these qualities in Joseph:
    - He displayed love in a difficult family situation (Gen. 47).
    - He displayed self-control in a difficult temptation (Gen. 39).
    - He displayed industry and patience in difficult circumstances (Gen.39:19 – 40:23).
    - He displayed faithfulness in a difficult task (Gen. 41:37 – 57).
    - He displayed goodness, gentleness, and kindness in difficult family reunions (Gen. 42; 50).

Step 7-What Is Immediate Context

Step 8- What is Whole Context

Step 9- What Are The Facts Within Context

Step 10-Find a Memory Verse

1. Write down at least one verse from your cross-reference or biographical portion of the study that really speaks to you and that you intend to memorise during the following week. This verse should come in handy when God provides an opportunity for you to work on this character quality in a specific way.

Step 11-Select a Situation or Relationship to Work on

1. We are now getting to the application part of the study. Think of an area in your life in which God wants you to work on this character quality — avoiding it if it's negative or building it up if it's positive. This can be either a situation or an interpersonal relationship. If it is a situation, anticipate in advance what you will do when the situation arises. Suppose you have been slothful, lazy. Your study on slothfulness has challenged you to get rid of this quality in your life. As you plan ahead, you know when situations will arise that will bring out the lazy streak in you, so you decide ahead of time what you will do: You will set two alarm clocks, one on the far side of the room, to help you get up in the morning to have a quiet time and be on time to work or school. If it is a relationship, determine ahead of time how you will respond in your interactions with that person. This person could be wife, husband, parents, children, girlfriend, boyfriend, work associates, school friends, or neighbors. Look for opportunities to work on that character quality in your relationships with that person or persons. Your goal is to have more mature relationships. One way of doing this is to think back and recall a good situation or relationship in your recent past when you did work on this quality.

Step 12-Plan a Specific Project

1. This is the practical part of your application and is the actual working out. Think of a project that you will work on to build a positive quality in your life or to get rid of a negative quality. Once I was working on the trait of gratefulness. One of my projects was to write grateful letters to five people who had been a blessing to me, saying, "I am grateful for you because. . . ." Remember: applications should be personal, practical, possible, and measurable.

Step 13-Write out Personal illustration

1. A few days after you have completed the first eight steps of this study, write out an illustration of how you were able to work on this quality. This is the "provable" (measurable) part of your application. Be specific, and write down where you have succeeded and where you might have failed. In just a short time you should be able to develop a whole set of personal examples of how God is working in your life, getting rid of negative qualities and building positive ones. These illustrations serve a number of purposes. When you get discouraged, read over the backlog of your illustrations and see how God has worked in you. When you are working with a "Timothy," use your illustrations to teach him and to encourage him in his own illustrations. When you are sharing your testimony or teaching a class, use these illustrations to add a personal element to your presentation: "Here is how God worked in my life." God often builds character in our lives by putting us in situations where we are tempted to do the opposite. For example, God may teach you honesty by placing you in a situation where you are tempted to be dishonest.

Step 14-What Further Analysis or Research I Need To Do, Next Time?

Step 15-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 3-Thematic Method

Step 1-Tools Required for this Method

1. Book
2. Study Bible
3. An Exhaustive Concordance
4. A topical Bible
5. You don't need many reference tools. You can do a limited study if you have only a topical Bible. But a topical Bible does not list all the references on a particular theme, so you will benefit by using an exhaustive concordance. You can make a list of every word that relates to the theme, then look up each word in the concordance and select the verses that deal specifically with your theme.
6. You can use this method when you don't have the time to do a full-scale topical study because the subject is too broad or because of the large number of Bible references on the subject.
7. This method is a good way to preview a topic by surveying the high points of its subordinate themes before attempting a regular topical study of the subject. Or you can use this approach when you are only interested in having certain questions answered on the theme. With this method you can discover exactly what you want to find out without spending valuable time on unrelated matters.
8. This method is one of the easiest types of personal Bible study to turn into a sermon or Sunday school lesson. After completing your personal study, make each of your questions a major point in your talk and share the biblical answers with your group, class, or congregation.
9. This method is a good one for teaching your "Timothy" or any new Christian. It is simple enough for someone who has not yet done any personal Bible study to grasp and do effectively.

Step 2-Choose a Theme to Study

1. Select a theme in which you are interested. If this is your first study of this kind, start with one that is small or short. In the Assignment section are some suggestions, including the questions; the example gives you a completed study.

Step 3-List all the verses you intended to study

1. Using your three tools — the study Bible, the exhaustive concordance, the topical Bible — make a list of all the Scripture verses that are related to the theme you have chosen. Remember to consider synonyms and other similar words and concepts when using the concordance. Select from this list the verses that are most important to your theme (unless you are trying to discover all the Bible says about your theme).

Step 4-Decide on the Questions you will ask

1. How do you know what questions to ask? Write down those in which you are most interested. What are some things you would like to know about your theme? Make a list of questions, not more than five in number. Remember that sometimes you may need to ask only one question. Write your question(s) on the form or on a blank sheet of paper.
    - Who?
    - What?
    - When?
    - Where?
    - Why?
    - How?
    - What are the things God hates?
    - According to the New Testament, what things should we “endure”?
    - What are the things we should “consider” as Christians?
    - What traits of a fool are given in the book of Proverbs?
    - According to Solomon (in Proverbs), what brings poverty?
    - What are the characteristics of an angry man?
    - What causes anger?
    - What are the results of anger?
    - What is the cure for anger?

Step 5-Ask your Questions of each reference

1. Read through your references, and ask your set of questions of each verse. Write down the answers you find in the appropriate places on your form or paper. Sometimes you will be able to answer all the questions in a given verse, but usually you will only answer part of them. Occasionally a verse may not answer any of your questions; in that case, leave that part blank on your form. If you are not finding any answers to your questions, start over and write a new set of questions.

Step 6-What Is Immediate Context?

Step 7- What is Whole Context?

Step 8- What Are The Facts Within Context?

Step 9-Draw some conclusion from your study

1. After you have finished checking the references and writing your answers, go back and summarise the answers to each of your questions. You might organise your study into an outline by grouping similar verses together and turning your questions into the major divisions of the outline. This will make it easy for you to share the insights you have discovered with others.

Step 10-What Further Analysis or Research I Need To Do, Next Time?

Step 11-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.

Method 4-Biographical Method

Step 1-Tools Required for this Method

1. Book
2. Study Bible
3. Exhaustive concordance
4. Topical Bible
5. Bible Dictionary or Encyclopaedia
6. Start with a person on whom you can do a simple study. Begin with one about whom there is a small number of references. Some biblical people can be studied in a few hours; others take weeks to study, and some major persons can take a lifetime. Do not start doing this study on a person such as Jesus, Moses, or Abraham. Begin with some minor but important people such as Andrew, Barnabas, or Mary of Bethany.
7. The secret of a good biographical study is to live with that person during the study. Walk in his or her sandals. Try to get inside their mind and see how they think, feel, and respond to circumstances. Attempt to see things from their point of view, hear with their ears, mingle with their friends, and fight with their enemies. Become that person while you are studying them. This is only possible if you spend much time with that person, reading, and rereading all the Bible references about them. A friend of mine, Wayne Watts, has spent a lifetime studying Abraham. He has studied this biblical person so long that he has taken on many characteristics of Abraham. He is a great man of faith, as Abraham was.
8. Be careful not to confuse different people who have the same name when you look up the references about them. You will have to be sure that the verse is speaking about the person you have chosen to study. You would not want to confuse John the Baptist with John the Apostle or John Mark. For example, the Bible shows us that the following names were popular and refer to different people:

- Zechariah — 30 different men
- Nathan — 20 men
- Jonathan — 15 men
- Judas — 8 men
- Mary — 7 women
- James — 5 men
- John — 5 men

9. Be careful to find the various names that may apply to just one person. Since the Bible came out of a Hebrew-Aramaic-Greek context, some people's names changed in the different languages, in both the Old Testament and the New. The apostle Peter, for example, is known as Peter, Simon, Simeon, and Cephas. Daniel's three friends, Hananiah, Mishael, and Azariah, are better known as Shadrach, Meshach, and Abednego. Sometimes a name change came because of a character change, which was the case of Jacob becoming Israel. So be careful and find all the names used for the same person in your Bible study.
10. Stay away from books written about biblical people until after you have exhausted every Bible reference about that person and have drawn every possible insight out of those texts. Don't let a Bible commentary rob you of the task of personal discovery or prejudice your views of a person. Do your own work first, then check other sources.

Step 2-Select the Person You want to Study

1. You might start out by selecting someone who either has a weakness that you have or a strength that you would like to develop. Choose a person whose life will give you some valuable insights into how you can conform more to God's standard for living and become more like Jesus Christ.

2. **Major Men in the Bible or other major Men.**
    - Abraham
    - Daniel
    - David
    - Elijah
    - Elisha
    - Ezekiel
    - Ezra
    - Isaiah
    - Isaac
    - Jacob
    - Jeremiah
    - Jesus
    - John (Apostle)
    - Joseph (O.T.)
    - Joshua
    - Moses
    - Nehemiah
    - Paul
    - Peter
    - Pharaoh
    - Samson
    - Samuel
    - Saul (O.T.)
    - Solomon

3. **Minor But Important Men in the Bible or other major Men.**
    - Aaron
    - Abel
    - Abimelech
    - Abner
    - Absalom
    - Achan
    - Adam
    - Ahab
    - Ahithophel
    - Amos
    - Ananias
    - Andrew
    - Apollos
    - Apostles (any)
    - Aquila
    - Asa
    - Balaam
    - Barnabas
    - Barzillai
    - Caiaphas
    - Caleb
    - Eli
    - Esau
    - Gehazi
    - Gideon
    - Habakkuk
    - Haggai
    - Haman
    - Herod
    - Hezekiah
    - Hosea
    - Jabez
    - James
    - Jehoshaphat

- Jeroboam
- Joab
- Job
- John the Baptist
- Jonah
- Jonathan
- Judas Iscariot
- Judges (any)
- Kings (any)
- Laban
- Lot
- Luke
- Mark
- Matthew
- Melchizedek
- Mephibosheth
- Mordecai
- Naaman
- Nathan
- Noah
- Philemon
- Philip
- Pontius Pilate
- Prophets (any)
- Rehoboam
- Shamgar
- Silas
- Stephen
- Timothy
- Titus
- Tychicus
- Uzziah
- Zechariah
- Zedekiah
- Zephaniah

- Zerubbabel

4. **Prominent Women in the Bible And other Women.**
    - Abigail
    - Abishag
    - Anna
    - Bathsheba
    - Deborah
    - Delilah
    - Dinah
    - Dorcas
    - Elizabeth
    - Esther
    - Eunice
    - Eve
    - Hagar
    - Hannah
    - Jezebel
    - Jochebed
    - Leah
    - Lydia
    - Martha
    - Mary (Jesus' Mother)
    - Mary Magdalene
    - Mary of Bethany
    - Michal
    - Miriam
    - Naaman's Maid
    - Naomi
    - Priscilla
    - Queen of Sheba
    - Rachel
    - Rahab
    - Rebekah
    - Ruth

- Sapphira
- Sarah
- The Shunammite
- Vashti
- Zipporah

Step 3-Make a list of all the references about that person

1. Using your reference tools, find all the Scripture passages you can about that person and things related to her life. This might include such things as her birth, major events of her life, her accomplishments, what others said about her, and her death. You will not be able to get all the necessary "vital statistics" about every person you study, but find out as much about them as you can. Also look up any references that deal with the historical background of her life. If you were studying Esther, you would need to study the background of her day: the Persian Empire. If you were studying the apostle Paul, you would have to study his missionary journeys.

Step 4-Write down first impressions (First reading)

1. Read through the Scripture references you have listed and make some notes. Write out the first impression you have of this person. Then write down some basic observations and important information you discover about him or her. Finally, list any problems, questions, or difficulties you wonder about as you read these references.

Step 4-Make a Chronological Outline (Second Reading)

1. For a major biblical person, read all the references again and make a chronological outline of the person's life. This will help you gain a good perspective on his life, and you will see how different events relate to one another. Later, when you study the events associated with his life, you will know in what part of his life they occurred. For minor biblical people or those about whose lives few details are given, read the references and make an outline on the basis of the information you have. Try to read all the references in one sitting and in a modern translation. This will help you feel the flow of the person's life. As you read, look for any natural, major divisions in his or her life. Then look for and write down any progressions and changes of attitude in that

person's life as times goes by. For example, a well known division of Moses' life is.

- Forty years in Pharaoh's court — learning to be a somebody.
- Forty years in the Median desert — learning to be a nobody.
- Forty years in the Sinai desert — learning that God is Somebody.

2. This is a real key to studying the characters of the people involved. See how God slowly molded and changed the people or how Satan brought them down.

Step 5-Get some insights into the person (Third Reading)

1. Go back over the references again, and look for possible answers to the questions suggested in appendix B. By answering some of these questions, you should get some helpful insights into the character of the person you are studying.

Step 6-Identify some Character Qualities (Fourth Reading)

1. As you review the references once again, use the suggested list of positive and negative characteristics in appendix C as a checklist. Write on your form or paper each quality, good and bad, that shows up in the person's life. Give a verse reference that shows each characteristic you have observed.

Step 7-Question to ask (Fifth Reading)

1. Reputation

- Who wrote what we know about this person?
- What did people say about him? What did his friends say about him?
- What did his enemies say about him?
- What did his family (wife, children, brothers, sisters, parents) say about him?
- What did God say about him?
- Why do you think God allowed this person to be mentioned in the Bible?

2. Tests of Character

- What were his aims and motives?
- What was he like in his home?
- How did he respond to failure? Did he get discouraged easily?
- How did he respond to adversity? Did he handle criticism well?
- How did he respond to success? Did he get proud when praised?

- How did he respond to the trivial and mundane things in life? Was he faithful in the little things?
- How quickly did he praise God for the good or bad things that happened to him?
- How quickly did he obey God when told to do something?
- How quickly did he submit to God-ordained authority?
- What was he like when he was alone with God?

3. Background

- What can you discover about his family and ancestry?
- What does his name mean? Why was he given that name? Was it ever changed?
- What was his home-life like? How was he raised? Where was he raised?
- What were the characteristics of his parents? How did they influence him?
- Was there anything special about his birth?
- Where did he live? What was his everyday life like?
- Was he exposed to other cultures? Did they affect him in any way?
- What was the condition of his country politically and spiritually during his lifetime?
- What kind of training did he have? Did he have any schooling?
- What was his occupation?
- How long did he live? Where did he die? How did he die?

4. Significant Events

- Was there any great crisis in his life? How did he handle it?
- What are the great accomplishments for which he is remembered?
- Did he experience a divine “call”? How did he respond to it?
- What crucial decisions did he have to make? How did they affect him? Others?
- Did any particular problem keep recurring in his life?
- Where did he succeed? Where did he fail? Why?
- How did the environment and circumstances affect him?
- What part did he play in the history of God’s plan?
- Did he believe in the sovereignty of God? (God’s control over all events)Relationships?

- How did he get along with other people? Was he a loner? Was he a team person?
- How did he treat other people? Did he use them, or serve them?
- What was his wife like? How did she influence him?
- What were his children like? How did they influence him?
- Who were his close companions? What were they like? How did they influence him?
- Who were his enemies? What were they like? How did they influence him?
- What influence did he have on others? On his nation? On other nations?
- Did he take care of his family? How did his children turn out?
- Did his friends and family help or hinder him in serving the Lord?
- Did he train anyone to take his place? Did he leave a disciple (a “Timothy”) behind?

5. Personality

- What type of person was he? What made him the way he was?
- Was his temperament choleric, melancholic, sanguine, or phlegmatic?
- What were the outstanding strengths in his character? What traits did he have?
- Did his life show any development of character as time passed? Was there growth and progression there?
- What were his particular faults and weaknesses?
- What were his particular sins? What steps led to those sins?
- In what area was his greatest battle: lust of the flesh, lust of the eyes, or pride of life?
- What were the results of his sins and weaknesses?
- Did he ever get the victory over his particular sins and weaknesses?
- What qualities made him a success or failure?
- Was he in any way a type of Christ? Spiritual Life
- What personal encounters did he have with God that are recorded in Scripture?
- What was his purpose in life? Did he try to bring glory to God?
- What message did he preach and live? Was his life a message for or against Christ/God?
- Did he live a separated life, distinct from worldly ways?

- What did he believe? What great lessons did God teach him?
- Why do you think God dealt with him the way he did?
- What was his attitude toward the Word of God? Did he know the Scriptures existing at that time?
- What kind of prayer life did he have? Did he have close fellowship with God?
- Was he bold in sharing his testimony? Was he a courageous witness in times of persecution?
- How big was his faith in God? How did he show it? Did God give him any specific promises?
- Was he a good steward of what God had given him — time, wealth, talents?
- Was he filled with the Spirit? What were his spiritual gifts? Did he use them?
- Was he eager to do God's will, willingly and without question?

Step 8-What Is Immediate Context?

Step 9- What is Whole Context?

Step 10- What Are The Facts Within Context?

Step 11-Show how other Bible truths are illustrated in the Person's Life

1. Examine the person's life to see how it illustrates other truths taught in the Bible. For example, does his or her life show the principle of "you will reap what you sow"? Look in that life for illustrations of some of the Proverbs or of principles taught in the Psalms. For instance, you might ask, "Does his life illustrate the promise, 'Delight yourself in the Lord and he will give you the desires of your heart' " (Ps. 37:4)? Find cross-references that illustrate what the Bible says about some of the characteristics you found in this person's life.

Step 12-Summarise the main Lesson (s)

1. In a few sentences write out what you think is the main lesson that is taught or illustrated by this person's life. Is there any one word that could describe that life? What was his or her outstanding characteristic?

Step 13-What Further Analysis or Research I Need To Do, Next Time?

Step 14-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summaries the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 15-Make Study Transferable

1. Condense what you have learned into a simple outline that will help you remember it and enable you to share your conclusions with others. Make it "pass-on-able." Ask yourself "What can this person's life mean to others? What can I share that I have learned that would help someone else?" Divide the information into natural sequences of time and/or events and lessons learned. Use the progressions that you have found and recorded. Then think of some easily remembered ways to title each section. Keep these titles true to the major content of each section, making use of rhymes, alliterations, and other memory devices. Use your imagination in this last step! An illustration of a transferable outline of the life of Barnabas might look like this:
    - He was an investor of money in the lives of church members (Act 4:36–37).
    - He was the introducer of Saul (later Paul) to the apostles (Acts 9:26 – 28).
    - He was the inspector of the new church at Antioch (Acts 11:22 – 24).
    - He was an instructor of new Christians, including Paul and Mark (Acts 11:22 – 26; 15:39).
    - He was the initiator on the first missionary journey, which he began as the team leader but ended as a team member (Acts 13 – 14).
    - He was an interpreter of the doctrine of salvation and God's plan for the Gentiles (Acts 13 – 14).
    - He was insistent in giving Mark another chance to be trained in the gospel ministry (Acts 15:36 – 39).

Step 16-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 5-Topical Method

Step 1-Tools Required for this Method

1. Book.
2. Study Bible
3. Exhaustive concordance
4. Topical Bible
5. Thompson Chain Reference Bible
6. Dickson's New Analytical Study Bible
7. Zondervan Dictionary of Bible Themes
8. NIV Thematic Study Bible
9. It enables us to study the Word of God systematically, logically, and in an orderly manner.
10. It gives us a proper perspective and balance regarding biblical truth. We get to see the whole of a biblical teaching.
11. It allows us to study subjects that are of particular interest to us.
12. It enables us to study the great doctrines of the Bible.
13. It lends itself to good and lively discussions. The results of a topical study are always easy to share with others.
14. It allows us variety in our lifetime commitment to personal Bible study. The number of topics in the Bible that we can study is almost limitless.
15. Be systematic. Don't try to study the Bible in a haphazard manner that is basically undisciplined. Make a list of all the things related to your topic, and make it as comprehensive and complete as possible. Then take up these items one at a time, studying them in a systematic and logical order.
16. Be thorough. As far as possible, find and study every verse that relates to the topic. The only way to know everything God has said on a topic is to go through the entire Bible and find all the passages on that topic. Use your concordance to do this.
17. Be exact. Try to get the exact meaning of every verse you study. Be sure to examine the context of each verse to avoid misinterpretation. The biggest mistake you must avoid is taking a verse out of its context.

Step 2-Select a Topic

1. You may choose a general subject, for example, all of the miracles in the Bible. You may select a more specific subject such as the miracles performed by Jesus or the miracles recorded in a certain book of the Bible. For your first study it is best to limit the topic to a specific subject in one book rather than study a subject in the entire Bible. You may select a topic which pertains to a need in your own life. You might select a topic about which you have been asked and could not answer or a topic which you do not fully understand. You may want to study topics you can use in counselling others in time of need. For example, you may want to study the topic of death so you will know how to comfort others. Or you may want to study fear so you can help those who are fearful.

Step 3-Compile A list of Words

1. Make a list of all the related words (synonyms and antonyms), phrases, events, and anything else that could have something to do with your topic. If you are studying suffering, for example, you will want to list words such as affliction, anger, chastisement, grief, health, pain, sorrow, trials, and tribulation. If you see that your topic has become too broad, narrow it down to a manageable size.

Step 4-Collect Bible References

1. Take your reference tools and begin to gather all the verses you can find on the topic. Look up in your concordance each related word listed in Step One. Make a list of all verses that relate in any way to the topic. Also, you will want to use your topical Bible to find verses for study.

Step 5-Consider Each Reference individually

1. Using the Comparison Chart at the end of this chapter, look up, read, and study each individual reference and write down your observations and insights on it. (You will use the Comparison Chart for both Step Three and Step Four.) Be sure to check the context (surrounding verses) carefully when studying a verse, to make sure you are interpreting it correctly.
2. Ask as many questions as you can about each verse you study. Remember to use the great what, why, when, where, who, and how questions. Don't forget to define all key words you come across.

Step 6-Compare and group the references

1. After you have carefully studied all your verses individually, you will begin to notice that some of the references naturally complement each other and deal with the same areas of the topic under study. Categorise these references on a piece of scratch paper.

Step 7-Condense Your Study into an Outline

1. Using the categories from Step Four, logically arranged as your main divisions, outline your study. Do this by grouping related or similar references together into natural divisions. Then organise these divisions into a logical pattern. In helping you organize your study, this step will also enable you to share it with others.

Step 8-What Is Immediate Context?

Step 9- What is Whole Context?

Step 10- What Are The Facts Within Context?

Step 11-Summarise the Information

1. After you gather all the information on a topic you will probably have a long list of Scriptures. You must now organise these verses to make the subject easily understood. Study the verses you collected. Identify main points made by the verses. What other verses make this same point? Arrange these verses together, then create a chart or outline to summarise your studies. Remember: You not only want to learn all the Bible teaches.

Step 12-Conclude Your Study

1. In your two-part conclusion, summarise your findings in a brief paragraph and then write out a practical application drawn from this summary. Remember to be personal and practical, writing a possible and measurable application.

Step 13-What Further Analysis or Research I Need To Do, Next Time?

Step 14-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 15-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 6-Word Study Method

Step 1-Tools Required for this Method

1. Books.
2. Study Bible
3. Exhaustive concordance
4. Several recent translations. (These will enable you to see the words different translators chose from the original ones. Do not use paraphrases in this study.)
5. A Bible dictionary and/or encyclopaedia.
6. A set of word studies (see the Introduction to this book).
7. A good English dictionary.
8. Topical Bible
9. The Complete Word-Study Dictionary of the Old Testament by Eugene Carpenter (AMG)
10. Gems from the Original by Harold J. Berry (Back to the Bible Broadcast)
11. The New International Dictionary of New Testament Theology: Abridged Edition, edited by Verlyn Verbrugge (Zondervan)
12. New Testament Words by William Barclay (Westminster John Knox)
13. A Theological Word Book of the Bible, edited by Alan Richardson (Macmillan)
14. A Theological Word Book of the Old Testament, edited by Laird Harris et al. (Moody Press)
15. Vincent's Word Studies in the New Testament by Marvin R . Vincent (Hendrickson)
16. If you have had some Greek, The Englishman's Greek Concordance of the New Testament (Zondervan) will be useful.
17. The Word Study Concordance and its companion volume The Word Study New Testament by Ralph Winter (William Carey Library).
18. The Word Study Method of Bible Study takes a microscopic look at the origin, definition, occurrences, and uses of a particular word, especially as it relates to the context of a passage of Scripture. The purpose is to learn as precisely and comprehensively as possible what the biblical writer meant by the word he used.
19. Sometimes several Greek words are translated by just one English word. We have already noted that the English word servant has seven Greek

equivalents, each with a different shade of meaning. Be sure to check your concordance carefully to see if this might be true of the word you are studying. Find out what each different original word meant.

20. Sometimes one Greek or Hebrew word is translated several ways in English. To overcome this difficulty you will have to do a careful study on all the different renderings of that original word. You can do this quite easily through the use of your exhaustive concordance. For example, the Greek word koinonia is translated five different ways in the King James Version: (1) “communication” — once; (2) “communion” — 4 times; (3) “contribution” — once; (4) “distribution” — once; and (5) “fellowship” — 12 times. Follow this procedure in solving this difficulty:
    - List the different ways the word is translated.
    - List how many times it is translated each way.
    - Give examples of each translation (if possible).
    - Write down how the different meanings might be related.
    - Determine if the writer of the book is using the word you are studying in single sense or is giving it a multiple meaning.
21. Sometimes an original word is translated by a whole phrase in English. This difficulty will take a little more work to overcome because concordances do not list word translations by phrases. You will have to compare the recent versions of the Bible you are using to see how the various translators have rendered the word. For example, Paul declared to the Corinthians, “But we all, with open face beholding as in a glass the glory of the Lord, are changed into the same image from glory to glory, even as by the Spirit of the Lord” (2 Cor. 3:18 KJV). The phrase “beholding as in a glass” is just one word in the original Greek (katoptrizomenoi), and you will discover some interesting truths when you study the origin of that word.

Step 2-List of words (check topical Bible, Exhaustive Concordance, Dictionary).

1. Adoption
2. Adversary
3. Apostle
4. Atonement
5. Baptize
6. Believe
7. Bless
8. Body
9. Call
10. Chasten
11. Christ
12. Church
13. Confess
14. Covenant
15. Death
16. Disciple
17. Everlasting
18. Evil
19. Faint
20. Faith
21. Favor
22. Fear
23. Fellowship
24. Flesh
25. Good
26. Gospel
27. Grace
28. Hear
29. Hell
30. Holy
31. Hope
32. Immanuel
33. Iniquity
34. Jehovah

35. Jesus
36. Judgment
37. Kingdom
38. Know
39. Law
40. Laying on of
41. Hands
42. Life
43. Light
44. Lord
45. Love
46. Lust
47. Manifest
48. Marriage
49. Mediator
50. Meek
51. Mercy
52. Mind
53. Minister
54. Miracle
55. Mystery
56. Name
57. Obey
58. Passover
59. Peace
60. Perfect
61. Perish
62. Preach
63. Propitiation
64. Reconcile
65. Redeem
66. Remnant
67. Repent
68. Rest
69. Resurrection

70. Righteous
71. Sabbath
72. Sacrifice
73. Saint
74. Sanctify
75. Save
76. Servant
77. Sin
78. Soul
79. Spirit
80. Temptation
81. Trial
82. Truth
83. Understand
84. Vain
85. Vision
86. Watch
87. Wisdom
88. Witness
89. Word
90. World
91. Worship

Step 3-Choose Your Word

1. In your previous personal Bible study, you may have wondered what certain words meant. Choose a word that you wondered about or are interested in.

Step 4-Find Its English Definition

1. Use your English dictionary and write out the definition of the English word. List with the definition any synonyms or antonyms of the word.

Step 5-Compare Translations

1. Read in different recent translations the passages where this word is used. Write down the different renderings of the word that you find. Take note of any renderings that are repeatedly and commonly used in these translations.

Step 6-Write Down The Definition of the Original Word

1. Find out what the original word is in your exhaustive concordance or word study book and write down its definition. You may find it has a number of usages.

Step 7-Check The Word's Occurrences in the Bible

1. Using your concordance again, find out how and where the word is used in the Bible. Ask these questions:
    - How many times does the word occur in the Bible?
    - In what books does it occur?
    - What writers used the word?
    - In what book does it occur most?
    - Where does the word occur first in the Bible?
    - Where does it occur first in the book I am studying?

Step 8-Find The Roof Meaning and Original of the word

1. This step brings you into some research. You will want to read a fuller discussion of the meaning and origin of the word you are studying, using a Bible dictionary, a Bible encyclopaedia, a word study set, or a theological word book.

Step 9-Discover the Word's Usage in the Bible

1. Here you will want to find out how the word is used in the Bible. The study of the root meaning (Step Six) told you what the word meant originally and where it came from, but some words change their meanings with the passage of time. Also, they might have different meanings in different situations and contexts. In the final analysis, the usage of a word is the most important factor in determining its true meaning. Fulfill this step in the following three ways:
2. Find out how the word was used during the time the book of the Bible was written. How was it used in other writings besides the Bible? To find out what the word meant and how it was used in the culture of the day, you will have to look at extra-biblical materials (for example, histories of the time); many times, however, the word study set you are using will have this information. Advanced students and people who know the original languages may find this information in theological dictionaries and Hebrew and Greek lexicons.
3. Find out how the word is used in the Bible. Using your exhaustive concordance, find out how the word is translated every time it appears in the Bible. Often the Scriptures define words through usage and illustrations; this is a way of finding out the scriptural definition. You may also ask some or all of the following questions:
    - How does the writer use the word in other parts of the book?
    - How does the writer use the word in other books he has written?
    - How is the word used throughout the whole testament?
    - Does the word have more than one usage? If so, what are its other uses?
    - What is the most frequent use of the word?
    - How is it used the first time in the Scriptures?
4. Find out how the word is used in the context of the passage. This is the ultimate test. The context will be your most reliable source for insights into what the writer really meant. Ask these questions:
    - Does the context give any clues to the meaning of the word?
    - Is the word compared or contrasted with another word in the context?
    - Is there any illustration in the context that clarifies the meaning of the word?

Step 10-What Is Immediate Context?

Step 11- What is Whole Context?

Step 12- What Are The Facts Within Context?

Step 13-Summarise your Study

1. During the first three steps of word study make notes on what you learn about the word. Write down the meanings of the word from the Bible margin, concordance, word study book, and modern dictionary. Record notes on its use in other Bible passages. When you complete your study, use what you have learned about charts and outlines to summarise your word study notes. Remember to record somewhere on your chart or outline the book, chapter, verse number, and word you are studying.

Step 14-What Further Analysis or Research I Need To Do, Next Time?

Step 15-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.

17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."
18. Be especially careful to keep your goal of “application, not interpretation only” in mind when you do a word study. Remember that you are doing personal Bible study, not just conducting an academic exercise. Discovering the full meaning of a biblical word is not an end in itself, because a word study without application has little spiritual value. In doing this study, constantly ask yourself, “How can understanding this word strengthen my spiritual life?”

Step 16-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 7-Book Background Method

Step 1-Tools Required for this Method

1. Books
2. Study Bible
3. Exhaustive concordance
4. A Bible dictionary and/or Bible encyclopaedia
5. A Bible handbook
6. A Bible atlas
7. Archaeology and Bible History by Joseph Free and Howard Vos (Zondervan)
8. The Bible and Archaeology by J.A. Thompson (Eerdmans)
9. Everyday Life in Bible Times (National Geographic Society)
10. Great People of the Bible and How They Lived (Reader's Digest Association)
11. Harper's Encyclopedia of Bible Life by Madeleine S. and J. Lane Miller (Books Sales)
12. The Oxford History of the Biblical World by Michael Coogan (Oxford University Press)
13. The Wycliffe Historical Geography of Bible Lands by Howard Vos (Hendrickson)
14. Church History
15. The Bible Knowledge Background Commentary, edited by Craig Evans, 3 vols. (Victor)
16. Chronological and Background Charts of the New Testament by H. Wayne House (Zondervan)
17. Chronological and Background Charts of the Old Testament by John Walton (Zondervan)
18. The IVP Bible Background Commentary: New Testament by Craig Keener (InterVarsity Press)
19. The IVP Bible Background Commentary: Old Testament by John Walton et al. (InterVarsity Press)
20. Manners and Customs in the Bible by Victor H. Matthews (Hendrickson)
21. The Zondervan Illustrated Bible Background Commentary: New Testament, edited by Clinton Arnold, 4 vols. (Zondervan)

22. The Zondervan Illustrated Bible Background Commentary: Old Testament, edited by John Walton, 4 vols. (Zondervan)

Step 2-Choose The Subject or Book of the Bible

1. Choose the subject, person, word, or book of the Bible you want to study, and begin gathering reference materials for your research. The availability of reference tools will largely determine the scope of your study.

Step 3-List Your Reference Tools

1. List all the reference tools you have gathered to do this study (see Tools You Will Need above). This is to help you remember which books were most useful for the background material you researched and what books you may want to refer to in future background studies.

Step 4-Get Insights from Archeology

1. Read Number of books about archeology of the time, also Biblical Archeology.

Step 5-Obtain Insights from Geography

1. You will need to become familiar with the geography of Palestine and the Near East in general. This includes the types of land found there, the major mountains and hills, elevation and rainfall, the major bodies of water (seas, lakes, rivers), location of cities and countries, famous landmarks, and the borders of surrounding countries of the time you are studying.
2. As you study the New Testament, particularly Paul's missionary travels, you will need to become acquainted with the Mediterranean countries and cities that were active during the days of the Roman Empire.
3. In all of your study of biblical geography, you must continually ask this question: "What is the effect of the surrounding geography on what I am studying?"
4. In this step, list all the insights you can get on geography for the subject or book you are studying.

Step 6-Get insights from History

1. You should have a working knowledge of the chronology (order of historical events) of the nation of Israel in the Old Testament. Learn the periods of history of the Hebrew nation; find out the origin and history of famous cities; learn the divisions of Jesus' ministry; be well versed on the history surrounding Paul's missionary travels. It is also helpful to know what major events were going on in other parts of the world during the time you are studying, in order to have a proper perspective on what God was doing in the world.
2. You might ask yourself, "What caused this particular event that I am studying? How did it affect the people involved? How did it affect the passage I am studying?" Be especially aware of events that illustrate God's sovereign control over the progress of history.
3. In this step, list all the insights you can get on history surrounding the subject or book you are studying.

Step 7-Discover Some Insights from Culture

1. If you are to understand what went on in Bible times, you need to learn about the total lifestyle of the ancient people in the Scriptures. Here are some areas you can research while asking yourself, "How do all these things affect the message and the people about whom I am studying?"
    - Types of clothing people wore.
    - Professions and trades in biblical times.
    - Music in the Bible.
    - Architectural styles in the Near East.
    - Manners and customs in Scripture.
    - Recreation in ancient times.
    - Family life in the Middle East.
    - Art in the Bible.
    - Languages and literature of surrounding nations.
    - Religious ceremonies in Israel and among pagan neighbours.
    - False religions of the area.
    - Weapons and tools used by the people.
2. In this step, list all the insights you derive from the way people lived in their cultures.

Step 8-Research Insights from Political environment

1. Much of what happened in Israel in the Old Testament and in the R oman world of Jesus, Paul, and the apostles is related to the political environment of the times.
2. Kings, emperors, rulers, and other powers governed the people of the time. Israel, for example, spent much of its history under foreign rule and even in exile. These other nations and political systems were bound to have an effect on the way God's people lived. Recognize, however, that God is always in control of the political situation. Even King Nebuchadnezzar acknowledged this fact (Dan. 4:34 – 35).
3. Egypt, Philistia, Assyria, Babylon, Persia, Greece, and Rome all played a major part in the Bible. What were these nations like? How did they affect Israel or the New Testament church? Many of the prophets' messages can only be understood in light of their current political climate.
4. In this step, write down all the insights you can from your research into the political conditions of the time period you are studying.

Step 9-What Is Immediate Context?

Step 10- What is Whole Context?

Step 11- What Are The Facts Within Context?

Step 12-Summarise Your Research

1. Now go back over Step Three through Step Six, and from the data you have gathered, summarise your research by answering these two questions:
    - How does this background information help me understand better what I am studying?
    - What influence did any of these factors have on the subject (or book) that I am studying?

Step 13-What Further Analysis or Research I Need To Do, Next Time?

Step 14-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."
18. Although a personal application may be hard to come by in this type of study, you should be able to get one from your original subject. In fact, research into the background of your subject may enable you to find an application you may need today, and the data can help you make that application personally relevant.

Step 15-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 8-Book Survey Method

Step 1-Tools Required for this Method

1. Books
2. Study Bible
3. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
4. A Bible dictionary and/or Bible encyclopaedia.
5. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
6. Bible atlases
7. Historical
8. Geographies
9. Historical background books
10. Bible surveys
11. Later you may check yourself and your conclusions against what other reliable scholars have done
12. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
13. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
14. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
15. New Testament Survey by Merrill C. Tenney (Eerdmans)
16. New Testament Times by Merrill C. Tenney (Baker)
17. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
18. Old Testament Times by R.K. Harrison (Baker)
19. Old Testament Today by John Walton and Andrew Hill (Zondervan)
20. Survey of the Bible by William Hendriksen (Baker)
21. A Survey of the New Testament by Robert H. Gundry (Zondervan)
22. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
23. Survey — get a bird's-eye view of the book.
24. Analysis — study everything in each chapter in detail.
25. Synthesis — put it back together again and draw some conclusions.

Step 2-Read the Book

1. This first step may seem obvious, but some people spend all their time reading about the Bible rather than reading the Scripture text itself. The only tools needed for this first step are your study Bible and several recent translations. Do not read any Bible surveys, handbooks, or commentaries at this point. Follow these seven suggestions:
2. Read through the book at one sitting. Except for the Psalms, the longest book in the Bible is Isaiah, and it can be read in three or four hours. Most of the other books, particularly those in the New Testament, can be read in much less time. If you have to break up your reading, try to finish a book in no more than two sittings. (For example, read Isaiah 1 – 39 at one sitting, then Isaiah 40 – 66.) You will be amazed at what you begin to see in Scripture as you do this.
3. Read through the book in a recent translation. This will enable you to understand what you are reading better, because you will be doing your reading in contemporary language.
4. Read through the book rapidly, ignoring the chapter divisions. Remember that the chapter divisions and verses were not in the original writing; they were added much later for convenience. Right now your purpose is to get the flow of the book and feel the pulse of the writer. Don't be concerned with the details at this stage (you will do that in the Chapter Analysis Method, chapter 10), but read the book quickly to get its main thrust.
5. Read through the book repeatedly. Repeat the process of reading as many times as you can. (Obviously, you will not be able to read the book of Isaiah as many times as the book of Colossians in a given time frame.) Each time you read the book through, you will notice some new things and the overall picture will become clearer and clearer. The more times you read a book through, the better you will be able to understand it. So stay with it.
6. Read through the book without referring to commentaries or someone else's notes. It is good to read in a Bible in which you have not made any notes yourself. Otherwise, when you see the notes you may have written (your own or others'), your mind will naturally fall back into that pattern and you will be hindered from seeing new things. After you have finished Step One, you may begin consulting with reference helps.
7. Read through the book prayerfully. Ask God to speak to your heart and open your eyes that you may see wonderful things in his law (Ps. 119:18).

8. Read through the book with pen or pencil in hand. As you begin reading the second or third time through, begin taking notes and making observations on what you are reading (see Step Two and the Book Survey Form).

Step 3-Make notes on what you Read

1. As you read through the book (see Step One), write down your impressions and the important facts you discover. Make these notes on a separate piece of paper or on the Book Survey Form found at the end of this chapter. Look for the following nine items:
2. Category: Is the book history? Poetry? Prophecy? Law? A biography? A letter?
3. First Impressions: What is the first impression you get from the book? What do you think is the purpose of the writer? What "feel" do you get from reading it?
4. Key Words: What are some of the significant words the writer uses? What words are repeated the most? What word or words is he emphasizing?
5. Key Verse: What seems to be the key verse (if any)? What ideas or phrases are repeated that may show his main thought? What is the writer's key statement?
6. Literary Style: Is the book a narrative? A drama? A personal letter? A discourse? Poetry? A combination of narration and poetry? Does the writer use figurative speech? Is he using a logical argument?
7. Emotional Tone: Is the writer angry? Sad? Happy? Worried? Excited? Depressed? Calm? How do you think his hearers must have felt when they received this writing? How does it make you feel?
8. Main Theme(s): What is the main theme? Is there more than one? What is the writer saying? What is his major emphasis?
9. Structure of the Book: Are there obvious divisions of thought in the book? How is the book organized? Around people? Events? Places? Ideas? Time spans?
10. Major People: Who are the principal personalities in the book? Which people are mentioned the most, and what parts do they play in the book?

Step 4-Initial Survey

1. Read the entire book at one sitting to identify the theme (subject) of the book. Choose a title that summarizes the theme. You will use this title on the Book Study Chart. This will also become the title of your outline.
2. Determine the purpose for which the book was written, to whom it was written, and the author.
3. Some books state the name of the author but for the names of others you will need to consult an outside Bible study resource.* Each author had a special reason for writing under the inspiration of the Holy Spirit. This purpose is usually reflected in the content of the book.
4. Determine the geographic setting of the book. This is where the events occurred. Record this on the Book Study Chart.
5. Summarize the basic life and ministry principle in one sentence. This is the basic truth of the book which is applicable to your life or ministry. There are many principles taught in a single book, but try to determine the most important for this summary statement. Remember, the chapter divisions in the Bible are not divinely inspired. They were made by man for ease in locating specific passages in the Bible. When you read the entire book without chapter divisions you are reviewing the message as it was originally given.
6. In this first reading do not be concerned with details. Survey the book for general information: Theme, author, purpose, to whom, geographic setting, and basic life and ministry principle. Read quickly to gain an overview of the entire book. Do not stop and analyze what you are reading. You will do that later.

Step 5-Book Study Chart

1. Read the book a second time. Note the major divisions of the book. These divisions may be determined by subject matter, events, biographical material, geographical settings, or other such factors.
2. Create titles for each chapter of the book. The chapter title should reflect the general content of a chapter but it should not be so general that it could fit any chapter of the Bible. Think of titles as handles with which to grasp the content of the chapter. Keep them short so they are easy to remember. Enter these chapter titles on the Book Study Chart.
3. Select the key verse of the book. The key verse should be one that best summarizes the purpose or content of the book. Enter the reference on the Book Study Chart. As you read, list the names of major characters in the space provided on the chart. This list will provide a selection from which to do biographical studies. You will learn how to do such studies later in this course.
4. Record key words and phrases on the chart. Key words and phrases are those basic to understanding the book. They are often repeated frequently or explained in detail in the book. You can use this list for word studies which you will learn how to do later in this course.

Step 6-Do Background Study

1. Find out the historical and geographical setting of the book. Into what background does the book fit? You can use the following questions to help you find some of the facts. Also use the ideas presented in the Book Background Method of Bible
2. Study (chapter 8). Many of the answers may be found right in the book itself, so look there first. If you can't find the answers in the text alone, then check outside references (see Tools You Will Need earlier in this chapter).
    - What can I learn about the writer(s)?
    - When was the book written? (Date)
    - Where was the book written?
    - To whom was the book written? Who were they? Who was he? Who was she? (Find out about their historical and geographical backgrounds.)
    - Why was the book written? (Investigate the circumstances related to the writing.)
    - What other background information sheds light on this book?

- What is the place of this book in the Bible? Is it a bridge between various periods of history?
- What are the geographic locations mentioned in the book? Where are they? (Draw a map if it will be helpful to you.)

Step 7-Make Horizontal chart of the Book's Content

1. One of the exciting steps in doing a book survey is making a horizontal chart. This is a diagramed layout of a book's contents on one or two sheets of paper. The value of such a chart is that it enables you to lay out visually the book's contents and divisions. It gives you a new perspective of the book. The three parts to a simple horizontal chart are the major divisions of the book, chapter titles, and paragraph titles. Why make a horizontal chart? You gain several benefits in this study by making one.
    - It helps you summarise the main ideas and contents of a book.
    - It enables you to see the contents of an entire book at a glance.
    - It helps you discover the relationships between chapters and between paragraphs.
    - It makes you aware of ideas repeated in several places in the book.
    - It serves as a memory device to help you recall a chapter's content quickly.
    - It enables you to think through a book and remember it. Preparation for making a horizontal chart. You need three tools to make a simple horizontal chart:
    - A Bible with paragraph divisions. Many recent versions have divided the text into paragraphs to enable you to see the units of thought. You have to know these in order to make the chart.
    - A pencil (or pen) and a ruler.
    - A blank sheet of paper, preferably 8 x 11 in size. Try to fit your chart on one sheet of paper so you can see the entire structure of the book at a glance. When you are working on a long book (e.g., Isaiah, Genesis, Psalms), try to use as few sheets as possible. In using more than one sheet, be sure to use the same scale so you can match the sheets. How to make a horizontal chart. Go through the following four steps for each chart you make.
2. On a blank sheet of paper, make as many vertical columns as there are chapters in the book. For longer books, make the columns narrower and abbreviate what you write in them and use two or three sheets of paper as needed.
3. Read through the book again and find its major divisions. Record these divisions in as few words as possible at the top of your chart (see the Sample Filled-out Form).

4. Read through the book again and think of a title for each chapter (or group of chapters in a longer book). Record these at the top of each column directly below the major divisions. Irving Jensen has suggested five characteristics of good chapter titles (Independent Bible Study, Moody Press, p. 108).
    - Preferably use one word, not more than four.
    - Use picturesque words that help you visualise the contents.
    - Use words taken directly from the text if possible.
    - Use words that have not been used previously as chapter titles in your study of other books.
    - Use words that tell you where you are in the book.
5. Read through the book once more and do the same thing to all the paragraphs in your book. Try to relate the paragraph titles to the chapter title under which they fall. As you become proficient in this exercise, you may add things to your charts that personalise your study.

Step 8-What Is Immediate Context?

Step 9- What is Whole Context?

Step 10-What Are The Facts Within Context?

Step 11-Make Tentative Outline of Book

1. After you have summarised the contents of the book on a horizontal chart, you are ready to make a simple tentative outline of the book. Later on, in the Book Synthesis Method of Bible Study (chap. 11), you will make your final, detailed outline of the book. In the current method you should merely outline the high points of the book and show their relationship with one another. Here are some suggestions:
2. Refer to your horizontal chart for ideas in outlining. Often your chart will readily show the natural organisation of the book's contents.
3. Outline from the major to the minor. Look for major divisions of the book first, then the subdivisions (which could be the chapters themselves), and finally the important points that fall under the subdivisions (which could be the paragraphs). In longer books you may need to have further subpoints under these.
4. Watch your paragraph divisions for clues in outlining. Since the paragraphis the basic unit of thought in writing, you can use the paragraph divisions as a guide in designing the outline of the chapter. Write a summary statement for each paragraph, then use those statements as the major points of your outline.
    I. After you have done your own outlining, compare yours with as many other outlines as you can. Check the reference books available to you and compare your work with those writers. Don't be concerned if your outline does not match these exactly, for often there are many ways to outline a book. You will discover that even notable scholars disagree with each other.

Step 12-What Further Analysis or Research I Need To Do, Next Time?

Step 13-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."
18. Even though the main purpose of a book survey is to get you acquainted with its general contents, you should not forget to make a personal application of some insight you discover along the way. Select one thing the Lord spoke to you about from your survey and write a personal, practical, possible, and measurable application on that truth. (See the instructions in chapter 1 on how to write a meaningful application.)

Step 14-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 9-Chapter Analysis Method

Step 1-Tools Required for this Method.

1. Books
2. Study Bible
3. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
4. A Bible dictionary and/or Bible encyclopaedia.
5. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
6. Bible atlases
7. Historical
8. Geographies
9. Historical background books
10. Bible surveys
11. Later you may check yourself and your conclusions against what other reliable scholars have done
12. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
13. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
14. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
15. New Testament Survey by Merrill C. Tenney (Eerdmans)
16. New Testament Times by Merrill C. Tenney (Baker)
17. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
18. Old Testament Times by R.K. Harrison (Baker)
19. Old Testament Today by John Walton and Andrew Hill (Zondervan)
20. Survey of the Bible by William Hendriksen (Baker)
21. A Survey of the New Testament by Robert H. Gundry (Zondervan)
22. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
23. Survey — get a bird's-eye view of the book.
24. Analysis — study everything in each chapter in detail.
25. Synthesis — put it back together again and draw some conclusions.
26. Methodical Bible Study by R obert A. Traina (Zondervan) [Very advanced]

27. The Navigator Bible Studies Handbook (NavPress)
28. The New Joy of Discovery in Bible Study by Oletta Wald (Augsburg Fortress)
29. Personal Bible Study by William Lincoln (Bethany Fellowship)
30. Basic Biblical Interpretation by Roy Zuck (Victor)
31. Basics of Bible Interpretation by Bob Smith (Word Books)
32. Getting the Message by Daniel Doriani (Presbyterian & R eformed)\
33. Grasping God's Word by Scott Duvall and Daniel Hays (Zondervan)
34. How to Read the Bible for All Its Worth by Gordon Fee and Douglas Stuart (Zondervan)
35. How to Understand Your Bible by T. Norton Sterrett (InterVarsity Press)
36. Protestant Biblical Interpretation by Bernard Ramm (Baker)
37. Studying, Interpreting, and Applying the Bible by Walter Henrichsen and Gayle Jackson (Zondervan)

Step 2-Select Chapter Title

1. Record on the Chapter Study Chart the name of the book and chapter number you are studying. Read the entire chapter and give it a title which reflects its content. (If you have done a book survey, you will have already selected a chapter title. Chapter Eleven on book study explains how to select chapter titles).

Step 3-Mark Paragraph Divisions

1. Mark the paragraph divisions within the chapter. In some Bibles the paragraphs are marked with a special paragraph mark ( ). In other Bibles they are marked with a boldface verse number. (Boldface means that the number is darker than the numbers in front of other verses.) If your Bible has neither paragraph marks or boldface markings then you must determine the paragraph divisions yourself. To do this you must know the definition of a paragraph: "A paragraph is a group of verses which relate to the same subject matter. When the subject changes, then a new paragraph has begun."
2. Mark the paragraph divisions in your Bible by drawing a circle around the verse number where each paragraph begins.

Step 4-Create Chapter Study Chart

1. On the Chapter Study Chart record the title of the chapter. List the verses of the paragraph divisions (see example). Then give each paragraph a title which reflects the content of that paragraph. Use the column with the heading "Notes" to record your thoughts about the relation between parts of the chapter (see example). These notes will assist you in creating the chapter outline.

Step 5-Write out Chapter Summary

1. You begin this step by reading and rereading the chapter many times. All you are doing here is making general observations on the chapter as a whole. After you have read it through several times, describe the general contents in one of the ways about to be described. Do not try to interpret what you see at this time, but merely aim to become familiar with the chapter. You may summarize it in one of the following ways:
2. Paraphrase it. The simplest way is just to rephrase the chapter in your own words. Summarize it in such a way that you could read your paraphrase to another person. You can check some recent paraphrase versions of the Bible for examples of this.
3. Outline it. Another simple way to summarize is through an outline that follows the paragraph divisions of the chapter. Give a title to each paragraph, then place some subpoints under each one.
4. Rewrite it without the modifying clauses and phrases. Use just the subjects, verbs, and objects in your summary. This is a great way to summarize some of Paul’s writings, for example, where run-on sentences (especially in the King James Version) are hard to understand because of their complexity. After you have completed your chapter summary, give a title to the chapter, using either your title from the book survey or a new one that occurred to you during this study.

Step 6-List Your Observations

1. This step begins the verse-by-verse analysis of the chapter. You start with the activity of observation. In this step you are looking in detail at every sentence and word and then writing down everything you see. You are trying to answer the question, “What does it say?” Before you can begin to interpret the meaning of a verse or passage, you must first look at what it actually says. The purpose of observation is to saturate yourself completely with the contents of a Bible passage. The mark of good Bible students is that they have trained themselves to observe things in the text that others overlook.
2. Overlooking biblical facts — reasons why. There are three reasons why we often overlook things and miss so much in the biblical text: (1) We rush through a passage too quickly. So we need to slow down and not indulge in speed-reading.
3. (2) We don’t write down our observations. Louis Agassiz, a 19th-century professor of zoology at Harvard who taught his students the art of observation, used to say, “A pencil is the best eye.” We need to write down what we see, and then we will begin seeing more. (3) We give up too soon. The longer we squeeze a lemon, the more juice we get out of it — to a point. But unlike lemons, the Bible never goes dry. We can study a text a hundred times and never exhaust the riches that are in it. So we shouldn’t give up too soon; rather, we should keep on looking — the longer the better.
4. Asking questions. As has already been discussed, the secret of good Bible study is learning to ask the right questions (see the Introduction at the beginning of this book). The number of questions you can ask of a text of Scripture increases in proportion to your willingness to stick with it. As you continue growing in Bible study skills, the type and number of questions you ask will improve and you will be able to observe more and more. The key to good observations, then, is a combination of diligence, patience, asking many questions, and writing down everything you see.
5. To help you in your observations, appendix F lists 30 ideas from which you can select the ones that will suit your study.

Step 7-What Is Immediate Context?

Step 8- What is Whole Context?

Step 9-What Are The Facts Within Context?

Step 10-Ask Interpretation Questions

1. After observing all you can in the passage under study, you are ready to move on to interpretation. This step involves asking questions about meaning, then trying to find answers to them. In this exercise you discover the biblical writer's purpose and message by uncovering what he means by his idea. Interpretive questions include asking what or why. Some examples:
    - Why did the writer say this?
    - What is the meaning of?
    - What is the significance of?
    - What is the implication of?
    - Why is this important?
2. You should be able to think of many other interpretive questions to ask. Never think that any question is too silly or dumb. Always write every question down on your form even though you may not find an answer to it. Later on, in studying another chapter, you may be able to answer it; if so, come back to this chapter's form and fill in the answer. Remember that the more questions you ask, the more you will draw out of the text.
3. Listing difficulties. When you are writing down your questions, it is a good idea to include any difficulties you have in understanding what is being said. Two common types are personal difficulties — questions you would like answered in the future, or items for future study, and possible difficulties — matters that don't bother you at this time, but would be good to study so you can help others who might be bothered by them.
4. Finding the right meaning of the text. After you have listed all your questions of interpretation, you need to start finding some answers. There are several ways to do this.
5. Check the context. You should always start here, for often the answers to your questions will be found in the verses preceding or following the text. Always interpret a passage in light of its context. To review the context, you may have to go back to your observations or your book survey to answer these questions:
    - Who is speaking?
    - Who is being spoken to?
    - When is it being spoken?
    - Where is it being spoken?

- What is the occasion or circumstance?
- What is the main subject of the message?
- Is the aim of what is being said revealed?
- What other background material clarifies this statement?

6. You can avoid a great deal of misinterpretation by first checking out the context of a verse.
7. Define the words and phrases used. You must interpret your text according to the correct and proper meaning of the words. Look up the important words in a Bible dictionary, word study set, or English dictionary.
8. Study the grammar and structure of the sentences. Sometimes a problem of interpretation can be cleared up by diagramming a sentence or by understanding what grammatical usage the writer intended in the paragraph. Compare several translations of the text. Use different recent versions of the Bible to see how the various translators rendered a particular word, phrase, or paragraph.
9. Study the background of the text. Interpret your text in light of the historical, cultural, geographic, economic, social, and political backgrounds of the book, including the current events of that time. This shows you the value of doing a book survey study before attempting a chapter analysis study. Use your reference tools to check on the background, the writer's purpose in writing the book, and other pertinent factors.
10. Compare your text with other passages of Scripture. This next step — correlation— will give you some answers to interpretive questions as you compare Scripture with Scripture.
11. Consult a commentary as a last resort. If you have tried diligently to find the meaning of the text yourself and your cross-references have not helped you, consult the works of great Bible scholars. There is a place for commentaries in Bible study, but it comes only after you have done your own work. Compare your interpretation with the writings of devout Christians and see if yours agrees with theirs. If you have a correct interpretation, you may be sure God has shown it to some other sincere Bible students in the past. If you can't find anyone who agrees with you, you have probably got a wrong interpretation.
12. Ask the six vital observation questions: What? Why? When? How? Where? Who?
13. Look for key words.

14. Look for repeated words and phrases.
15. Look for questions being asked.
16. Look for answers being given.
17. Look for commands.
18. Look for warnings.
19. Look for comparisons — things that are alike.
20. Look for contrasts — things that are different.
21. Look for illustrations.
22. Look for causes and effects and reasons for doing things.
23. Look for promises and their conditions for fulfilment.
24. Look for progression from the general to the specific.
25. Look for progression from the specific to the general.
26. Look for steps of progression in a narrative or biography.
27. Look for lists of things.
28. Look for results.
29. Look for advice, admonitions, and attitudes.
30. Look for the tone of the passage — emotional atmosphere.
31. Look for connectives, articles, and prepositions.
32. Look for explanations.
33. Look for Old Testament quotes in the New Testament.
34. Look for the literary form.
35. Look for paradoxes.
36. Look for emphasis through the use of space — proportion.
37. Look for planned exaggerations or hyperboles.
38. Look at the grammatical construction of each sentence.
39. Look for the use of the current events of the times.
40. Look for the force of the verbs.
41. Look for anything unusual or unexpected.

Step 11-Correlate Your Chapter with Other Scriptures

1. This step involves finding cross-references for the verses of your chapter in order to further explain the meaning of the text. It is based on the principle of interpretation that says, “The Bible interprets itself; Scripture best explains Scripture.” You can often interpret passages that are not clear by passages that are. Ask yourself, “How do other Scriptures relate to and explain this one?” Steps in cross-referencing. Here are some practical ways to correlate verses:
2. First, look for cross-references within the same book you are studying. This is internal correlation.
3. Second, compare statements in other writings by the same author. This is external correlation.
4. Then, compare with other books in the same testament.
5. Finally, compare references in all of Scripture. You can find cross-references in a study Bible or reference Bible or by looking up similar words in a concordance. Types of cross-references. There are several different types of cross-references, including the following:
    - The pure cross-reference. This is sometimes called the parallel cross reference because it says almost exactly the same thing as the verse you are analyzing.
    - The illustrative cross-reference. This type, which may involve a real event or person in history, illustrates what the verse you are studying is saying.
    - The contrasting cross-reference. This type says the opposite of what your verse says. It may look like a contradiction, but it is actually approaching the subject from a different viewpoint. One word of caution: Be sure to check the context of the verses you choose as cross-references. Otherwise you may be making them say what the writer did not say.

Step 12-List Some Possible Applications

1. The last part of the verse-by-verse analysis is to write down some possible applications. Remember that your goal in Bible study is not just interpretation but application. Because of the many applications a chapter may have, you will only be listing them here. Later on, in Step Seven, you will choose one of these to write out and to work on for a week. You have already seen that you cannot work on more than one application per week. It is better to record just one and fully apply that truth to your life than to write down several applications and then fail to implement any of them.

Step 13-Write Down Some Concluding Thoughts

1. Go back over the results of the first five steps, review them carefully, and write down some concluding thoughts on the chapter. These can include additional observations, some of your interpretations, themes you have discovered, possible topics and people you want to study in the future, words you may want to do a word study on, and any number of other thoughts that come to mind.

Step 14-What Further Analysis or Research I Need To Do, Next Time?

Step 15-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned
2. Who?
3. What?
4. When?
5. Where?
6. Why?
7. How?
8. Example to Follow.
9. Error to Avoid.
10. Duty to Perform.
11. Promise to claim.
12. Relationship to develop.
13. Changes to make.
14. Prayer to pray.

15. Did I see anything of myself in this person's life?
16. Did he show some of my weaknesses?
17. Did he reveal to me some of my strengths?
18. What impressed me most about this person's life?
19. Where do I fall short in this area?
20. What do I intend to do about it?
21. What were the positive character traits? Ask God to help you develop them in your own life.
22. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
23. Compose one sentence which summaries the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 16-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 10-Paragraph Study

Step 1-Tools Required for this Method

1. Book
2. Study Bible
3. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
4. A Bible dictionary and/or Bible encyclopaedia.
5. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
6. Bible atlases
7. Historical
8. Geographies
9. Historical background books
10. Bible surveys
11. Later you may check yourself and your conclusions against what other reliable scholars have done
12. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
13. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
14. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
15. New Testament Survey by Merrill C. Tenney (Eerdmans)
16. New Testament Times by Merrill C. Tenney (Baker)
17. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
18. Old Testament Times by R.K. Harrison (Baker)
19. Old Testament Today by John Walton and Andrew Hill (Zondervan)
20. Survey of the Bible by William Hendriksen (Baker)
21. A Survey of the New Testament by Robert H. Gundry (Zondervan)
22. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
23. Survey — get a bird's-eye view of the book.
24. Analysis — study everything in each chapter in detail.
25. Synthesis — put it back together again and draw some conclusions.
26. Methodical Bible Study by R obert A. Traina (Zondervan) [Very advanced]

27. The Navigator Bible Studies Handbook (NavPress)
28. The New Joy of Discovery in Bible Study by Oletta Wald (Augsburg Fortress)
29. Personal Bible Study by William Lincoln (Bethany Fellowship)
30. Basic Biblical Interpretation by Roy Zuck (Victor)
31. Basics of Bible Interpretation by Bob Smith (Word Books)
32. Getting the Message by Daniel Doriani (Presbyterian & R eformed)\
33. Grasping God's Word by Scott Duvall and Daniel Hays (Zondervan)
34. How to Read the Bible for All Its Worth by Gordon Fee and Douglas Stuart (Zondervan)
35. How to Understand Your Bible by T. Norton Sterrett (InterVarsity Press)
36. Protestant Biblical Interpretation by Bernard R amm (Baker)
37. Studying, Interpreting, and Applying the Bible by Walter Henrichsen and Gayle Jackson (Zondervan)

Step 2-Select Chapter Title

1. Record on the Chapter Study Chart the name of the book and chapter number you are studying. Read the entire chapter and give it a title which reflects its content. (If you have done a book survey, you will have already selected a chapter title. Chapter Eleven on book study explains how to select chapter titles).

Step 3-Mark Paragraph Divisions

1. Mark the paragraph divisions within the chapter. In some Bibles the paragraphs are marked with a special paragraph mark ( ). In other Bibles they are marked with a boldface verse number. (Boldface means that the number is darker than the numbers in front of other verses.) If your Bible has neither paragraph marks or boldface markings then you must determine the paragraph divisions yourself. To do this you must know the definition of a paragraph: "A paragraph is a group of verses which relate to the same subject matter. When the subject changes, then a new paragraph has begun."
2. Mark the paragraph divisions in your Bible by drawing a circle around the verse number where each paragraph begins.

Step 4-Create Chapter Study Chart

1. On the Chapter Study Chart record the title of the chapter. List the verses of the paragraph divisions (see example). Then give each paragraph a title which reflects the content of that paragraph. Use the column with the heading "Notes" to record your thoughts about the relation between parts of the chapter (see example). These notes will assist you in creating the chapter outline.

Step 5-Write out Chapter Summary

1. You begin this step by reading and rereading the chapter many times. All you are doing here is making general observations on the chapter as a whole. After you have read it through several times, describe the general contents in one of the ways about to be described. Do not try to interpret what you see at this time, but merely aim to become familiar with the chapter. You may summarise it in one of the following ways:
2. Paraphrase it. The simplest way is just to rephrase the chapter in your own words. Summarise it in such a way that you could read your paraphrase to another person. You can check some recent paraphrase versions of the Bible for examples of this.
3. Outline it. Another simple way to summarise is through an outline that follows the paragraph divisions of the chapter. Give a title to each paragraph, then place some sub-points under each one.
4. Rewrite it without the modifying clauses and phrases. Use just the subjects, verbs, and objects in your summary. This is a great way to summarise some of Paul’s writings, for example, where run-on sentences (especially in the King James Version) are hard to understand because of their complexity. After you have completed your chapter summary, give a title to the chapter, using either your title from the book survey or a new one that occurred to you during this study.

Step 6-List Your Observations

1. This step begins the verse-by-verse analysis of the chapter. You start with the activity of observation. In this step you are looking in detail at every sentence and word and then writing down everything you see. You are trying to answer the question, “What does it say?” Before you can begin to interpret the meaning of a verse or passage, you must first look at what it actually says. The purpose of observation is to saturate yourself completely with the contents of a Bible passage. The mark of good Bible students is that they have trained themselves to observe things in the text that others overlook.
2. Overlooking biblical facts — reasons why. There are three reasons why we often overlook things and miss so much in the biblical text: (1) We rush through a passage too quickly. So we need to slow down and not indulge in speed-reading.(2) We don’t write down our observations. Louis Agassiz, a 19th-century professor of zoology at Harvard who taught his students the art of observation, used to say, “A pencil is the best eye.” We need to write down what we see, and then we will begin seeing more. (3) We give up too soon. The longer we squeeze a lemon, the more juice we get out of it — to a point. But unlike lemons, the Bible never goes dry. We can study a text a hundred times and never exhaust the riches that are in it. So we shouldn’t give up too soon; rather, we should keep on looking — the longer the better.
3. Asking questions. As has already been discussed, the secret of good Bible study is learning to ask the right questions (see the Introduction at the beginning of this book). The number of questions you can ask of a text of Scripture increases in proportion to your willingness to stick with it. As you continue growing in Bible study skills, the type and number of questions you ask will improve and you will be able to observe more and more. The key to good observations, then, is a combination of diligence, patience, asking many questions, and writing down everything you see.
4. To help you in your observations, appendix lists 30 ideas from which you can select the ones that will suit your study.

Step 7-What Is Immediate Context?

Step 8-What is Whole Context?

Step 9-What Are The Facts Within Context?

Step 10-Ask Interpretation Questions

1. After observing all you can in the passage under study, you are ready to move on to interpretation. This step involves asking questions about meaning, then trying to find answers to them. In this exercise you discover the biblical writer's purpose and message by uncovering what he means by his idea. Interpretive questions include asking what or why. Some examples:
    - Why did the writer say this?
    - What is the meaning of?
    - What is the significance of?
    - What is the implication of?
    - Why is this important?
2. You should be able to think of many other interpretive questions to ask. Never think that any question is too silly or dumb. Always write every question down on your form even though you may not find an answer to it. Later on, in studying another chapter, you may be able to answer it; if so, come back to this chapter's form and fill in the answer. Remember that the more questions you ask, the more you will draw out of the text.
3. Listing difficulties. When you are writing down your questions, it is a good idea to include any difficulties you have in understanding what is being said. Two common types are personal difficulties — questions you would like answered in the future, or items for future study, and possible difficulties — matters that don't bother you at this time, but would be good to study so you can help others who might be bothered by them.
4. Finding the right meaning of the text. After you have listed all your questions of interpretation, you need to start finding some answers. There are several ways to do this.
5. Check the context. You should always start here, for often the answers to your questions will be found in the verses preceding or following the text. Always interpret a passage in light of its context. To review the context, you may have to go back to your observations or your book survey to answer these questions:
    - Who is speaking?
    - Who is being spoken to?
    - When is it being spoken?
    - Where is it being spoken?

- What is the occasion or circumstance?
- What is the main subject of the message?
- Is the aim of what is being said revealed?
- What other background material clarifies this statement?

6. You can avoid a great deal of misinterpretation by first checking out the context of a verse.
7. Define the words and phrases used. You must interpret your text according to the correct and proper meaning of the words. Look up the important words in a Bible dictionary, word study set, or English dictionary.
8. Study the grammar and structure of the sentences. Sometimes a problem of interpretation can be cleared up by diagramming a sentence or by understanding what grammatical usage the writer intended in the paragraph. Compare several translations of the text. Use different recent versions of the Bible to see how the various translators rendered a particular word, phrase, or paragraph.
9. Study the background of the text. Interpret your text in light of the historical, cultural, geographic, economic, social, and political backgrounds of the book, including the current events of that time. This shows you the value of doing a book survey study before attempting a chapter analysis study. Use your reference tools to check on the background, the writer's purpose in writing the book, and other pertinent factors.
10. Compare your text with other passages of Scripture. This next step — correlation— will give you some answers to interpretive questions as you compare Scripture with Scripture.
11. Consult a commentary as a last resort. If you have tried diligently to find the meaning of the text yourself and your cross-references have not helped you, consult the works of great Bible scholars. There is a place for commentaries in Bible study, but it comes only after you have done your own work. Compare your interpretation with the writings of devout Christians and see if yours agrees with theirs. If you have a correct interpretation, you may be sure God has shown it to some other sincere Bible students in the past. If you can't find anyone who agrees with you, you have probably got a wrong interpretation.
12. Ask the six vital observation questions: What? Why? When? How? Where? Who?
13. Look for key words.

14. Look for repeated words and phrases.
15. Look for questions being asked.
16. Look for answers being given.
17. Look for commands.
18. Look for warnings.
19. Look for comparisons — things that are alike.
20. Look for contrasts — things that are different.
21. Look for illustrations.
22. Look for causes and effects and reasons for doing things.
23. Look for promises and their conditions for fulfilment.
24. Look for progression from the general to the specific.
25. Look for progression from the specific to the general.
26. Look for steps of progression in a narrative or biography.
27. Look for lists of things.
28. Look for results.
29. Look for advice, admonitions, and attitudes.
30. Look for the tone of the passage — emotional atmosphere.
31. Look for connectives, articles, and prepositions.
32. Look for explanations.
33. Look for Old Testament quotes in the New Testament.
34. Look for the literary form.
35. Look for paradoxes.
36. Look for emphasis through the use of space — proportion.
37. Look for planned exaggerations or hyperboles.
38. Look at the grammatical construction of each sentence.
39. Look for the use of the current events of the times.
40. Look for the force of the verbs.
41. Look for anything unusual or unexpected.

Step 11-Correlate Your Chapter with Other Scriptures

1. This step involves finding cross-references for the verses of your chapter in order to further explain the meaning of the text. It is based on the principle of interpretation that says, “The Bible interprets itself; Scripture best explains Scripture.” You can often interpret passages that are not clear by passages that are. Ask yourself, “How do other Scriptures relate to and explain this one?” Steps in cross-referencing. Here are some practical ways to correlate verses:
2. First, look for cross-references within the same book you are studying. This is internal correlation.
3. Second, compare statements in other writings by the same author. This is external correlation.
4. Then, compare with other books in the same testament.
5. Finally, compare references in all of Scripture. You can find cross-references in a study Bible or reference Bible or by looking up similar words in a concordance. Types of cross-references. There are several different types of cross-references, including the following:
    - The pure cross-reference. This is sometimes called the parallel cross reference because it says almost exactly the same thing as the verse you are analysing.
    - The illustrative cross-reference. This type, which may involve a real event or person in history, illustrates what the verse you are studying is saying.
    - The contrasting cross-reference. This type says the opposite of what your verse says. It may look like a contradiction, but it is actually approaching the subject from a different viewpoint. One word of caution: Be sure to check the context of the verses you choose as cross-references. Otherwise you may be making them say what the writer did not say.

Step 12-Observe the Details

1. The paragraphs in a chapter can relate to each other in different ways. Here are some special things to observe as you study paragraphs:
2. Connectives:Words called "connectives" are very important. They reveal relationships within and between paragraphs. The word "but" is a connective and introduces a contrast. For example: But these speak evil of those things which they know not; But what they know naturally, as brute beasts, in those things they corrupt themselves. (Jude 1:10).
3. There is a contrast in this paragraph. False teachers speak evil of things they do not know BUT they also corrupt the things they do know. The verse begins with the word "but" which should make you look back to verse 9 to see what the contrast is: Yet Michael the archangel, when contending with the devil he disputed about the body of Moses, durst not bring against him a railing accusation, but said, The Lord rebuke thee. (Jude 1:9) Verse 10 contrasts false teachers who speak evil of dignities with the archangel Michael. Even though he held a great position, he did not accuse the devil but said "The Lord rebuke thee." The connective word "or" indicates a contrast. For example: For God shall bring every work into judgment, with every secret thing, whether it be good OR whether it be evil. (Ecclesiastes 12:14) Other connective words to watch for are "like" and "as." Instead of a contrast these words show comparisons between things. For example in the following verse Satan is compared to a lion: . . . the Devil AS a roaring lion, walketh about, seeking whom he may devour. (I Peter 5:8) The word "and" is another connective. It adds to what has just been stated: Like wise also these filthy dreamers defile the flesh, despise dominion, AND speak evil of dignities. (Jude 1:8) The word "if" introduces a conditional statement. Many of the promises and prophecies of the Old Testament are stated this way. They tell what God will do IF (on the condition that) His people make a certain response: IF my people, which are called by my name, shall humble themselves, and pray, and seek my face, and turn from their wicked ways, then will I hear from Heaven and will forgive their sin, and will heal their land. (II Chronicles 7:14) The word "that" sets forth a purpose. It tells that something happened "in order that" a certain purpose would be accomplished: And He came and dwelleth in a city called Nazareth; THAT it might be fulfilled which was spoken by the prophets, He shall be called a Nazarene. (Matthew 2:23) Watch also for the connecting words "for,

because, therefore." These words introduce reasons and results: But when He saw the multitudes, He was moved with compassion on them, BECAUSE they fainted, and were scattered abroad, as sheep having no shepherd. (Matthew 9:36) The words "in, into, and with" are also important connectives. They also indicate relationships between concepts: He turned the sea INTO dry land and they went through the flood on foot: there did we rejoice in Him. (Psalm 66:6).

4. General Structure: As you study paragraphs observe the arrangement of ideas and how the verses relate to each other. Sometimes the author makes a general statement, then explains it with examples. Other times he lists a series of ideas and then summarizes with a general statement. In the example given later in this chapter, you will note that Jude wrote several paragraphs listing characteristics of false teachers. He then gave Old Testament examples which illustrated what he was teaching.
5. Repetitions: Each word of the Bible is inspired by the Holy Spirit. When words or phrases are repeated it is because they are especially important. The Holy Spirit inspired the writers to repeat words and phrases in order to fix them in your memory. The words "verily, verily" are an example of this. When Jesus preceded a statement with these words it was like an announcer saying "May I have your attention please. I have an important announcement to make." Study in detail any words, phrases, or verses that are repeated.
6. Questions And Answers: It is also important to observe the questions and answers of the Bible. Often an author will introduce a subject by asking a question. He will then explain this question and give answers which relate back to the question. A good example of this is Romans 6. Read the entire chapter. Note the questions in verses l-3 and the answers developed throughout the chapter.
7. Introductions: Watch for paragraphs that introduce the subject that is to follow. For example, in the book of Jude which you studied in the last chapter verse 3 introduces the material to follow: Beloved, when I gave all diligence to write unto you of the common salvation, it was needful for me to write unto you, and exhort you, that ye should earnestly contend for the faith which was once delivered unto the saints. (Jude 1:3) This introductory paragraph explains the purpose of his writing. He is exhorting them to earnestly contend for the true faith. The remainder of the chapter gives reasons for this exhortation. There

are false teachers creeping into the church who are trying to turn them from the true faith.

8. Summaries And Conclusions: Be alert for paragraphs that summarize an entire passage, chapter, or even a book. For example, the book of Ecclesiastes contains one verse which summarizes the whole book. In Ecclesiastes the writer has described his quest for life apart from God. His final conclusion is: Let us hear the conclusion of the whole matter: Fear God, and keep His commandments: for this is the whole duty of man. For God shall bring every work into judgment, with every secret thing, whether it be good, or whether it be evil. (Ecclesiastes 12:13-14).
9. Progressions In Thought: When studying paragraphs, watch for progressions in thought. Note the following paragraph: And beside this, giving all diligence, add to your faith virtue; and to virtue knowledge; And to knowledge temperance; and to temperance patience; and to patience godliness; And to godliness brotherly kindness; and to brotherly kindness charity. For if these things be in you and abound, they make you that ye shall neither be barren or unfruitful in the knowledge of our Lord Jesus Christ. But he that lacketh these things is blind, and cannot see afar off, and hath forgotten that he was purged from his old sins. (II Peter 1:5-9) There is definite progression in this passage. We are to add one thing to another until we become fruitful.
10. Literary Form: Literary form refers to how a passage is written. Some passages are in narrative or story form. This means they read like a story. Other paragraphs are in poetic form (poems) like the passages in the book of Psalms. Some paragraphs are parables which are short stories illustrating a spiritual truth. Some paragraphs are in dramatic form. For example, the Song of Solomon contains dramatic as well as poetic form. Discourse form is much like a sermon. It is a series of paragraphs giving instruction on a certain subject.
11. Key Words: Identifying key words will help you understand the meaning of a paragraph. Key words are those important to the meaning of a paragraph. Often they are words which are repeated. Especially note key words which you do not understand. These words can be studied in a word study. (You will learn how to do this later in this course). For example, read the following verse: For there are certain men crept in unawares, who were before of old ordained to this condemnation, ungodly men, turning the grace of our God into

lasciviousness, and denying the only Lord God and our Lord Jesus Christ. (Jude 1:4) Do you know what the word "lasciviousness" means? It is an important word in this paragraph because it describes false teachers. One of their characteristics is that they have turned the grace of God into lasciviousness. This word is an example of a key word to study.

12. Grammatical Construction: The word "grammar" refers to parts of speech or words that fit together to make up sentences and paragraphs. Watch for words which are called verbs. These are words that show action telling what someone did in the past, is doing in the present, or will do in the future. They also are used in commands: GO ye into all the world and PREACH the Gospel to every creature. (Mark 16:15) The words "go" and "preach" are action words. They are verbs. They are commands for us to obey. A noun is a word that names a person, place, or thing. The words in capitals below are nouns: JUDE, the servant of JESUS CHRIST, and brother of JAMES... (Jude 1:1) Nouns tell who and what is involved and where the action took place. A pronoun is a word that replaces or stands for a noun. The words "him" and "her" are examples. Instead of saying “The Holy Spirit inspired Jude to write the book" you could say "The Holy Spirit inspired HIM to write the book." The word "him" is a pronoun standing for the noun Jude.
13. Adjectives and adverbs are important parts of speech also. Adverbs tell something about a verb. It tells how something happened. For example, in the sentence "He ran quickly," the word "quickly" is an adverb because it tells how he ran. An adjective describes a noun or pronoun. If we said "Jude was tall," the word "tall" is an adjective which describes Jude. If you have not studied parts of speech before this may seem confusing at first, but you will soon learn to identify these as you practice. Parts of speech are important because they identify people, places, and things. They tell who did something, where, when, and why. They tell how things were done and what was, is, or will be done. They also provide descriptions and details which increase understanding of the subject matter.

Step 13 Create Paragraph Study Chart

1. By studying paragraphs in detail as described in Step Two, you will identify certain paragraphs that relate to each other. Their relationship may be contrasts, comparisons, progressions, or otherwise. Select these for paragraph study. You will create a chart to summarize your study of these paragraphs. Select a general title for your chart which reflects the relationship of the paragraphs or the subject which they concern. The chart will also include the paragraph titles and divisions made during the chapter study.
2. Record on the chart the book, chapter, and paragraphs studied. Use margins of the chart to make observations and applications.

Step 14 Create Paragraph Outline

1. Use the chart to help you create an outline of the paragraphs. The outlines you create on chapters and paragraphs will help you as you share God's truth with others because they help you present what you have learned in an orderly way.

Step 15-What Further Analysis or Research I Need To Do, Next Time?

Step 16-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person’s life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person’s life?
13. Where do I fall short in this area?
14. What do I intend to do about it?

15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 17-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 11-Verse by Verse Analysis Method

Step 1-Tools Required for this Method

1. Books
2. Study Bible
3. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
4. A Bible dictionary and/or Bible encyclopaedia.
5. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
6. Bible atlases
7. Historical
8. Geographies
9. Historical background books
10. Bible surveys
11. Later you may check yourself and your conclusions against what other reliable scholars have done
12. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
13. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
14. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
15. New Testament Survey by Merrill C. Tenney (Eerdmans)
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17. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
18. Old Testament Times by R.K. Harrison (Baker)
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20. Survey of the Bible by William Hendriksen (Baker)
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22. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
23. Survey — get a bird's-eye view of the book.
24. Analysis — study everything in each chapter in detail.
25. Synthesis — put it back together again and draw some conclusions.

26. Methodical Bible Study by R obert A. Traina (Zondervan) [Very advanced]
27. The Navigator Bible Studies Handbook (NavPress)
28. The New Joy of Discovery in Bible Study by Oletta Wald (Augsburg Fortress)
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34. How to Read the Bible for All Its Worth by Gordon Fee and Douglas Stuart (Zondervan)
35. How to Understand Your Bible by T. Norton Sterrett (InterVarsity Press)
36. Protestant Biblical Interpretation by Bernard R amm (Baker)
37. Studying, Interpreting, and Applying the Bible by Walter Henrichsen and Gayle Jackson (Zondervan)
38. Unlocking the Bible.
39. The-bible-and-the-dead-sea-scrolls.

Step 2-Write Out a Personal Paraphrase

1. Write out the verse in your own words. Do not use one of the modern paraphrases except to get the idea of how to do it. Stay true to the verse you are paraphrasing, and try to condense rather than expand it.

Step 3-List some Questions, Answers and Observations

1. In column 3 of the Chapter Analysis Form at the end of this chapter, list any questions you have relating to words, phrases, persons, topics, and doctrines in that verse. Write down any answers you can find and also record any observations you have. Mark these as follows:
   - Q = Question.
   - A = Answer.
   - O = Observations.

Step 4-Find Some Cross References for Each Verse

1. Using the cross-references from your study Bible or from Scripture memory, write down some cross-references (at least one) for the verse you are studying. Identify the word or phrase you are cross-referencing at the end of this chapter. Use a concordance if you do not have a cross-referenced Bible.

Figure of Speech

1. **Review the figure of speech of the following:**
    - **Text.**
    - **Writing.**
    - **Book.**
    - **Journal.**
    - **Article.**
    - **Report.**
    - **Bible.**
    - **Sermon.**
    - **Dissertation.**
    - **Government Documents.**
    - **Theses and Dissertation.**
    - **Newspaper.**
    - **Magazines.**
    - **Audiobook.**
    - **Sermon and Preaching.**
    - **Public Speaking.**
    - **TV.**
    - **Radio.**
    - **Podcast.**
    - **Communication.**
    - **Talk.**
    - **Speak.**
    - **Conversation discussion.**
    - **Debates.**
    - **Discussion.**

2. **These are the following books to use for Figure of Speech**
    - **Glossary of Literary Terms by M. H. Abrams.**
    - **Figures of Speech used in the Bible by E. W. Bullinger.**
    - **Figure of Spedch and exploration of used of idiomatic phrases in Conversation by Elizabet Jame Holt.**
    - **Figures of Speech by Christina Alm Arvius.**
    - **Figures of Speech or Figures of Thought by Ananda Coomaraswamy.**
    - **The Princeton Encyclopedia of Poetry and Poetics by Roland Greene.**

Step 5-Record any insights you get from each verse

1. Having thought through the words, phrases, and concepts in the verse, record any insights that you get from them. These could be further observations, words and names that you have looked up and defined, or any other thought that comes to you. Let your imagination go and be as creative as you can in this fifth column, called Personal Application, in the form at the end of this chapter.

Step 6-What Is Immediate Context?

Step 7-What is Whole Context?

Step 8-What Are The Facts Within Context?

Step 9-Write down a brief personal application for each verse

1. Because of the number of verses in your study, you will not be able to design an application project for each verse. Instead, just try to record some devotional thoughts that come to you from each verse. Later, in a devotional Bible study, you can pick one of the thoughts and plan to work on it. Or, if a particular verse seems to meet an immediate need, go ahead and write out an application that is possible, practical, personal, and measurable.

Step 10-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.

5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 11-What Further Analysis or Research I Need To Do, Next Time?

Step 12-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 12-Book Synthesis Method

Step 1-Tools Required for this Method

1. Books
2. Study Bible
3. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
4. A Bible dictionary and/or Bible encyclopaedia.
5. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
6. Bible atlases
7. Historical
8. Geographies
9. Historical background books
10. Bible surveys
11. Later you may check yourself and your conclusions against what other reliable scholars have done
12. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
13. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
14. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
15. New Testament Survey by Merrill C. Tenney (Eerdmans)
16. New Testament Times by Merrill C. Tenney (Baker)
17. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
18. Old Testament Times by R.K. Harrison (Baker)
19. Old Testament Today by John Walton and Andrew Hill (Zondervan)
20. Survey of the Bible by William Hendriksen (Baker)
21. A Survey of the New Testament by Robert H. Gundry (Zondervan)
22. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
23. Survey — get a bird's-eye view of the book.
24. Analysis — study everything in each chapter in detail.
25. Synthesis — put it back together again and draw some conclusions.
26. Methodical Bible Study by R obert A. Traina (Zondervan) [Very advanced]

27. The Navigator Bible Studies Handbook (NavPress)
28. The New Joy of Discovery in Bible Study by Oletta Wald (Augsburg Fortress)
29. Personal Bible Study by William Lincoln (Bethany Fellowship)
30. Basic Biblical Interpretation by Roy Zuck (Victor)
31. Basics of Bible Interpretation by Bob Smith (Word Books)
32. Getting the Message by Daniel Doriani (Presbyterian & R eformed)\
33. Grasping God's Word by Scott Duvall and Daniel Hays (Zondervan)
34. How to Read the Bible for All Its Worth by Gordon Fee and Douglas Stuart (Zondervan)
35. How to Understand Your Bible by T. Norton Sterrett (InterVarsity Press)
36. Protestant Biblical Interpretation by Bernard R amm (Baker)
37. Studying, Interpreting, and Applying the Bible by Walter Henrichsen and Gayle Jackson (Zondervan)

Step 2-Reread the Book

1. Reread the book several times. R ead it at one sitting, in a recent translation, rapidly, repeatedly, prayerfully, without referring to commentaries, and with pen or pencil in hand.

Step 3-Write Out a detailed, final outline

1. Compare the horizontal chart and tentative outline you created in your book survey with the passage summaries you created in your chapter analysis studies. Based on this comparison and your recent readings, write out a detailed, final outline of the book. Merrill Tenney gives an excellent example in his book on Bible study methods.

Step 4-Write down a descriptive Book Title

1. From your horizontal chart in the book survey and your detailed, final outline in Step Two, write down a descriptive title for the book you have just studied. Think up an original title that describes in a few words what the book is all about. You might also consult your chapter titles and form a synthesis of them.

Step 5-Make summary of your insights

1. Review and compare the concluding thoughts in each of your chapter analysis studies and summarise what you believe are the major themes and conclusions of the book. Do not refer to commentaries at this point, for these should be your own insights into God's Word. These insights could also include observations gained from your new readings.

Step 6-What Is Immediate Context?

Step 7-What is Whole Context?

Step 8-What Are The Facts Within Context?

Step 9-What Further Analysis or Research I Need To Do, Next Time?

Step 10-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

18. Review all the personal applications you made in your book survey and chapter analysis studies and the possible applications you listed for each chapter. If you haven't fulfilled some of the written applications yet, write those down in this step and make specific plans to carry them out immediately. If you have done them, choose another possible application from the chapter studies or one from your synthetic study and write it out here. R efer to chapter 1 of this book for the ways to do this.

Step 11-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Step 12-Share The Results of your Study with others

1. Bible study should not just be food for your soul and increase your understanding of the Word of God. Its results, including your applications, need to be shared with others. You can do this in two ways:
2. Share with your "Timothy" (or Timothette) in a one-on-one situation. When you get together, share what you are learning from the Bible study, what applications you have been working on, and how he or she too can profit from their own study. The more you give out, the more you will learn yourself.
3. Share with your Bible study group. If you are not in one already, you might want to form a small group in which all of you are studying the same book of the Bible and sharing your findings. This way you will strengthen and help one another in areas of the studies that may not be clear to some in the group.

Method 13-Theological Study Method

Step 1-Tools Required for this Method

1. Study Bible
2. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
3. Topical Book
4. Exhaustive Concordance
5. Cross Reference
6. Bible theology Books
7. Bibliology Books
8. Theology Books
9. Christology Book
10. Pneymatology Books
11. Angelology Books
12. Demonology Books
13. Satanology Books
14. Anthropology Books
15. Soteriology Books
16. Ecclesiology Books
17. Eschatology Books

Step 2 Select The topic

1. The following outline of Biblical theology will assist you in selecting topics for use in the theological method of Bible study:

2. Biblical Theology
    - Bibliology: The study of the doctrine of the Bible.
    - Origin.
    - Revelation.
    - Inspiration.
    - Authority.
    - Illumination (how the Holy Spirit illuminates or helps us understand the Bible).
    - Interpretation.

3. Theology: Study of God the Father.
    - The attributes of God.
    - The works of God.
    - The names of God.
    - The triune nature of God.

4. Christology: The study of the doctrine of Jesus Christ.
    - The attributes of Jesus.
    - The works of Jesus.
    - The names of Jesus.
    - The triune nature of Jesus.
    - His life in the flesh:
        A. Birth and childhood.
        B. Baptism.
        C. Temptation.
        D. Transfiguration.
        E. Teachings.
        F. Miracles.
        G. Sufferings and death.
        H. Resurrection.
        I. Ascension.
    - The second return of Jesus Christ.
    - The messianic kingdom.
    - The deity of Jesus: The study of how Jesus was both divine and human, In one person.
    - His preexistence with God the Father.
    - Old Testament types of Jesus Christ.

5. Pneumatology: The study of the doctrine of the Holy Spirit.
    - The attributes of the Holy Spirit.
    - The work and ministry of the Holy Spirit.
        A. In the Old Testament.
        B. In the New Testament.
        C. In the present Church age.
    - The names of the Holy Spirit.
    - Preexistence of the Holy Spirit with God the Father.
    - Triune nature of the Holy Spirit.
    - The Holy Spirit in the Old Testament contrasted with the Holy Spirit in the New Testament.
    - Types and symbols of the Holy Spirit.
    - Gifts of the Holy Spirit.

- Fruit of the Holy Spirit.
- Baptism in the Holy Spirit.

6. Angelology: The study of good angels, the angels of God:
    - Their structure and organisation.
    - Names of angels.
    - The work of angels: Past, present, future.

7. Demonology: The study of wicked angels who are the demons of Satan:
    - Origin.
    - Structure and organisation.
    - Names.
    - Work: Past, present, future.
    - Judgment and destination.

8. Satanology: Study of Satan:
    - Origin.
    - Fall.
    - Names.
    - Work: Past, present, future.
    - Judgment and destination.

9. Anthropology: The study of the origin and nature of man:
    - The origin of man.
    - The fall of man.
    - The sin nature of man.
    - God's remedy for man's sin.

10. Soteriology: The study the doctrine of salvation.
    - The development of the plan of Salvation: Traced from the first promise of salvation in Genesis 3:15 throughout the Bible.
    - Study of the Saviour, Jesus Christ (see God the Son Jesus Christ, Cristology).
    - The finished work of the Saviour.
    - The terms of salvation.

11. Ecclesiology: This is the study of the doctrine of the Church. It focuses on all the Bible teaches regarding the spiritual Body of Jesus Christ which is called the Church:
    - The Church as an organism: The body of Christ.
    - The contrast between Israel and the Church.
    - The organisation of the Church:
        A. Ordinances.
        B. Order.
        C. Structure.
        D. Service.
        E. Doctrine of the church.

12. Eschatology: Study of the last events which are to happen before eternity begins:
    - Prophecy concerning the Church.
    - Prophecy concerning Israel.
    - Prophecy concerning other nations of the world.
    - Prophecy concerning the Messiah: His returns and establishing of His kingdom.
    - The resurrections of the dead.
    - The judgments.
    - The tribulation.
    - The millennium.
    - The eternal states of the righteous and the unrighteous.

Step 3-Define The doctrine Selected

1. The definitions of basic Bible doctrines are given in the preceding outline. These include Christology, pneumatology, theology, Bibliology, angelology, demonology, satanology, anthropology, soteriology, ecclesiology, and eschatology.

Step 4-Select the Bible Portion to be studied

1. Decide the book or books of the Bible in which you will study this doctrine. Books of the New Testament are the best to use for theological research. The Old Testament is largely prophetic or in narrative (story) form. The New Testament, especially the Gospels and the Letters, provide much material for theological Bible study.

Step 5-Gather information on the doctrine

1. Use what you have learned about book, chapter, paragraph, verse, and word studies to help you gather information on the doctrine which you are studying. As you read, make notations on everything the Scriptures reveal about the doctrine.

Step 6-Summarise the information you gathered

1. Summarise the information you recorded during Bible study. Use the outline on theology given in this chapter to help you organize your study notes into an outline or chart.

Step 7-What Is Immediate Context?

Step 8-What is Whole Context?

Step 9-What Are The Facts Within Context?

Step 10-What Further Analysis or Research I Need To Do, Next Time?

Step 11-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?

12. What impressed me most about this person’s life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure.”

Step 12-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 14-Studying Bible Prophecy

Step 1-Tools Required for this Method

1. Study Bible
2. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
3. Topical Book
4. Exhaustive Concordance
5. Cross Reference

Step 2-Define Prophecy

1. The word "prophecy" means to speak forth. Bible prophecy includes three basic kinds of speaking forth:
   - A message of inspiration from God.
   - Prediction of future events in God's eternal plan.
   - An interpretation for man of the acts of God.

Step 3-Method of Prophecy

1. THE SPOKEN WORD:
   - The method most often used was the spoken word. God would tell the prophet the words to speak. For example, God said to the prophet Jeremiah: . . for thou shalt go to all that I shall send thee, and whatsoever I command thee thou shalt speak. (Jeremiah 1:7) Throughout the book of Jeremiah God's instructions to him were.
   - Go and cry in the ears of Jerusalem, saying, Thus saith the Lord. (Jeremiah 2:2).
   - Jeremiah spoke the words which God told him to speak.

2. ACTED PROPHECIES:
   - In addition to spoken prophecy, God had the prophets visually act out a message. For example, God told Jeremiah to:. . . Make thee bonds and yokes and put them upon thy neck. . . (Jeremiah 27:2).

- These yokes were a visual prophecy of the yokes of bondage which were to come on the people because of their sin. Jeremiah acted out the prophetic message of God.

Step 4-Source of Prophecy

1. The source of Biblical prophecy is God who reveals His message to man through the Holy Spirit: For the prophecy came not in old time by the will of man; but holy men of God spake as they were moved by the Holy Ghost. (II Peter 1:21).
2. But God hath revealed them unto us by His Spirit: for the Spirit searcheth all things, yea, the deep things of God. (I Corinthians 2:10).
3. God can speak accurately of the future because: Known unto God are all His works from the beginning of the world. (Acts 15:18).
4. Remember the former things of old: for I am God, and there is none else; I am God, and there is none like me. Declaring the end from the beginning, and from ancient times the things that are not yet done, saying, My counsel shall stand, and I will do all my pleasure. (Isaiah 46:9-10).
5. God raises up true prophets: The Lord thy God will raise up unto thee a Prophet from the midst of thee, of thy brethren, like unto me; unto him ye shall hearken. (Deuteronomy 18:15).
6. God reveals His future plans to these prophets: Surely the Lord God will do nothing but He revealeth His secret unto His servants the prophets. (Amos 3:7).

Step 5- False Prophets

1. Satan imitates true prophecy through false predictions by fortune tellers, witches, and astrologers. These methods are not of God. The Prophet Daniel said: Daniel answered in the presence of the king and said, The secret which the king hath demanded cannot the wise men, the astrologers, the magicians, the soothsayers shew unto the king.
2. But there is a God in heaven that revealeth secrets and maketh known to the king Nebuchadnezzar what shall be in the latter days. . . (Daniel 2:27-28).
3. True prophecy directs attention to Jesus Christ: Wherefore I give you to understand, that no man speaking by the Spirit of God calleth Jesus accursed;

and that no man can say that Jesus is the Lord, but by the Holy Ghost. (I Corinthians 12:3).

4. The Bible warns of false prophets (Matthew 24:11,24; Mark 13:22). A person called "the false prophet" will be evident in events at the end of the world (Revelation 13:11-17; 16:13; 19:20; 20:10). The Bible reveals several ways to identify false prophets:
    - They teach sexual immorality and permissiveness: II Peter 2:13.
    - They try to lead people away from obedience to God's Word: Deuteronomy 13:1-5.
    - They make false claims: Matthew 24:23-24.
    - They deceive people with miraculous signs: Matthew 24:11,24.
    - They do not prophecy according to the proportion of faith (in right relation to God's Word): Romans 12:6.
    - False prophets do not have the fruit of the Holy Spirit in their lives: Matthew 7:15-16; Galatians 5:22-23.
    - What they prophesy does not come to pass: Deuteronomy 18:20-22.

Step 6-Purpose of Prophecy

1. TO AUTHENTICATE GOD'S MESSAGE: Fulfilled prophecy proves that God's message is authentic (true). In Isaiah 41:21-23 God challenges the gods of the heathen nations to prove their power by foretelling future events. They could not do it because they were false gods: Produce your cause, saith the Lord; bring forth your strong reasons, saith the King of Jacob. Let them bring them forth, and shew us what shall happen: let them shew the former things, what they be, that we may consider them, and known the latter end of them; or declare us things for to come. Shew the things that are to come hereafter, that we may know that ye are gods. (Isaiah 41:21-23).
2. TO CONFIRM GOD'S MESSENGER: Prophecy confirms the true messengers of God: The prophet which prophesieth of peace, when the word of the prophet shall come to pass, then shall the prophet be known, that the Lord hath truly sent him. (Jeremiah 28:9).
3. TO INSTRUCT BELIEVERS: Believers are to receive instruction from prophecy and take heed (pay attention) to it: We have also a more sure word of prophecy; whereunto ye do well that ye take heed, as unto a light that shineth in a dark place. . . (II Peter 1:19).
4. IMPORTANCE OF STUDYING PROPHECY There are three main reasons why it is important to study Bible prophecy:
    - All Scripture is inspired of God and is profitable for study: All Scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness; That the man of God may be perfect, thoroughly furnished unto all good works. (II Timothy 3:16-17).
    - Prophecy brings understanding of past, present, and future events in the plan of God:. . . the things which thou hast seen, and the things which are, and the things which shall be hereafter. (Revelation 1:19).
    - Understanding of God's future plan prevents deception by Satan: Then if any man shall say unto you, Lo, here is Christ, or there; believe it not. For there shall arise false Christs, and false prophets, and shall shew great signs and wonders: insomuch that, if it were possible, they shall deceive the very elect. BEHOLD, I HAVE TOLD YOU BEFORE. Wherefore if they shall say unto you, behold He is in the desert; go not forth: behold He is in the secret chambers; believe it not. (Matthew 24:23-26) God's future plan has been shared before it happens so we will not be deceived by Satan.

- There is a special blessing pronounced upon those who study Bible prophecy: Blessed is he that readeth, and they that hear the words of this prophecy, and keep those things which are written therein: for the time is at hand. (Revelation 1:3).

Figure of Speech

1. **Review the figure of speech of the following:**
    - **Text.**
    - **Writing.**
    - **Book.**
    - **Journal.**
    - **Article.**
    - **Report.**
    - **Bible.**
    - **Sermon.**
    - **Dissertation.**
    - **Government Documents.**
    - **Theses and Dissertation.**
    - **Newspaper.**
    - **Magazines.**
    - **Audiobook.**
    - **Sermon and Preaching.**
    - **Public Speaking.**
    - **TV.**
    - **Radio.**
    - **Podcast.**
    - **Communication.**
    - **Talk.**
    - **Speak.**
    - **Conversation discussion.**
    - **Debates.**
    - **Discussion.**

2. **These are the following books to use for Figure of Speech**
    - **Glossary of Literary Terms by M. H. Abrams.**
    - **Figures of Speech used in the Bible by E. W. Bullinger.**
    - **Figure of Spedch and exploration of used of idiomatic phrases in Conversation by Elizabet Jame Holt.**
    - **Figures of Speech by Christina Alm Arvius.**
    - **Figures of Speech or Figures of Thought by Ananda Coomaraswamy.**
    - **The Princeton Encyclopedia of Poetry and Poetics by Roland Greene.**

Step 7-Study of Prophecy

1. Bible prophecy is part of the "meat" of the Word of God which we referred to previously in this course. The "meat" of prophecy is more difficult to understand than the "milk" of God's Word which presents basic concepts of the Christian faith. If you are a new believer and do not have any background knowledge of the Bible, you should study other portions of God's Word before you try to study the prophetic books. Study the Gospels, Acts, and Letters of the New Testament. Study the Poetry, Law, and History divisions of the Old Testament. As you study, use what you have learned in this course about book, chapter, paragraph, verse, and word study. After you have a basic knowledge of these divisions, then study the prophetic books of the Bible. Do not worry if you do not understand all of the prophecies in the Bible. Many great Bible scholars have debated for years about the meaning of some portions of Bible prophecy.

Step 8-Prophetic Books

1. In addition to the books of prophecy there are many other chapters and verses of prophecy scattered throughout God's Word. The very first prophecy recorded in the Bible is in the book of Genesis: And I will put enmity between thee and the woman, and between thy seed and her seed: it shall bruise thy head, and thou shalt bruise His heel. (Genesis 3:15)
2. This verse prophesies the coming of Jesus Christ who, through His death for the sins of man, would crush the enemy, Satan. It is not possible to list in this manual every prophecy in the Word of God. We just want you to be aware that there are prophecies throughout the entire Bible. Prophecy is not just confined to the books known as the Books of Prophecy. With study and experience you will be able to identify the prophetic theme that runs throughout the entire Bible.

Step 9-Understanding Prophecy

1. Some people are frustrated when they try to study Bible prophecy. Because prophecy is more difficult than other portions of the Bible, they wonder if God really intended for them to understand it. It is possible to understand Bible prophecy. God wanted so much for Daniel to understand prophecy that he sent an angel to explain it to him. The angel said: . . . I am now come forth to give thee skill and understanding.(Daniel 9:22).
2. Jesus took time to explain Old Testament prophecy to His Disciples: And He said unto them, These are the words which I spake unto you, while I was yet with you, that all things must be fulfilled, which were written in the law of Moses, and in the prophets, and in the psalms concerning me. (Luke 24:44)
3. When the Disciples asked Jesus about the end of the world, Jesus listed several prophetic signs for which they were to watch. He wanted them to understand future events. Jesus said: So likewise ye, when ye shall see all these things, know that it is near, even at the doors. (Matthew 24:33).
4. In the introduction to the book of Revelation, a book which some consider quite difficult to understand, it is clear that God wants His people to understand prophecy: The Revelation of Jesus Christ which God gave unto Him, to shew unto His servants things which must shortly come to pass. . . (Revelation 1:1).

Step 10-What Is Immediate Context?

Step 11-What is Whole Context?

Step 12-What Are The Facts Within Context?

Step 13-Keys to Understanding

1. ONE: THE BASIC THEME OF PROPHECY The Lord Jesus Christ is the basic theme of Bible prophecy. There are many other subjects of Bible prophecy. For example, there are prophecies of judgment of wicked nations by God. But the underlying theme of all Bible prophecies is that they somehow relate to Jesus and the purpose of God regarding Him: Having made known unto us the mystery of His will, according to His good pleasure which He hath purposed in Himself; That in the dispensation of the fullness of times He might gather together in one all things in Christ, both which are in heaven, and which are on earth; even in Him. (Ephesians 1:9-10) All Bible prophecy, even when it deals with subjects such as judgment upon nations, etc., relates to the overall plan of God. That plan is to bring all mankind into right relationship with God through the Lord Jesus Christ. The purpose is to gather in one all things in Christ. The Bible states that the "spirit" or theme of Bible prophecy is Jesus: . . . for the testimony of Jesus is the spirit of prophecy. (Revelation 19:10) When you study Bible prophecy consider it in terms of this question: How does this prophecy relate to Jesus Christ (the spirit of prophecy) and God's overall plan concerning Him?
2. TWO: THE BIBLE INTERPRETS ITSELF Another key to understanding is to realize that often the Bible explains its own prophecies. For an example of how the Bible interprets itself read Daniel chapter 2. Here a king by the name of Nebuchadnezzar is given a dream from God. Upon waking he cannot remember the dream. He calls upon the astrologers and magicians to recall and interpret the dream. They cannot do it. Then God uses the prophet Daniel to tell the king what he dreamed and interpret it for him. Thedream is described by Daniel in verses 31-35. The interpretation of the dream is given in verses 36- 45. This is an example of how, in many passages, the Bible interprets its own prophecies. The New Testament interprets many of the prophecies of the Old Testament because much of the Old Testament is fulfilled in the New Testament. For example, compare this Old Testament prophecy and the New Testament fulfillment: . . . and I will say to them which were not my people, Thou art my people, and they shall say, Thou art my God. (Hosea 2:23) Even us, whom He hath called, not of the Jews only, but also of the Gentiles? As he saith also in Osee, I will call them my people, which were not my people; and her beloved, which was not beloved. And it shall come to pass that in the place

where it was said unto them, ye are not my people; there shall they be called the children of the living God. (Romans 9:24-26) Fulfilled prophecy in the New Testament includes many Old Testament prophecies concerning the coming Messiah, Jesus Christ.

3. THREE: THE RULE OF DOUBLE REFERENCE Another key to understanding Bible prophecy is the "rule of double reference." This rule for interpreting Bible prophecy states that a prophecy of immediate fulfillment is made as a means of teaching a deeper truth or foretelling an event to be fulfilled farther in the future. Many times in the Bible a prophecy was fulfilled immediately after it was given, but the same prophecy applied not only to the event which was fulfilled immediately, but also to a second fulfillment farther in the future. For example, there is a prophecy given in Ezekiel 28:1-19 which is addressed to Ethbaal who was then the king of Tyre. He was a wicked king. He was a type of the Antichrist who will arise during the end of the world. By saying Ethbaal is a "type" we mean that in nature and actions he was like the Antichrist which will come in the future. (You will learn more about "types" in the next chapter.) When God spoke in prophecy through Ezekiel, it was fulfilled in the immediate future in the life of Ethbaal. But there is a future event, as yet unfulfilled, where the same prophecy applies to the evil end time ruler called the Antichrist. As you study Bible prophecy remember this rule of double reference. Ask yourself two questions:
   - What did this prophecy mean at the time it was given for the people to whom it was given?
   - Is there a future double reference in this prophecy?

4. FOUR: PROPHETIC PERSPECTIVE The prophets described future events as if they were continuous and in immediate order. For example, Isaiah prophesied: The Spirit of the Lord God is upon me; because the Lord hath anointed me to preach good tidings unto the meek; He hath sent me to bind up the broken hearted, to proclaim liberty to the captives, and the opening of the prison to them that are bound; To proclaim the acceptable year of the Lord, and the day of vengeance of our God; to comfort all that mourn; To appoint unto them that mourn in Zion, to give unto them beauty for ashes, the oil of joy for mourning, the garment of praise for the spirit of heaviness; that they might be called trees of righteousness, the planting of the Lord, that He might be

glorified. (Isaiah 61:1-3) When Jesus read from this portion of Isaiah in Luke 4:17-20 He stopped with the phrase “to proclaim the acceptable year of the Lord." Then He closed the book and said that these Scriptures were fulfilled in Him that day. By this He meant that He was fulfilling this prophecy. He was the one with God's Spirit upon Him to preach good tidings, bind up the broken hearted, proclaim liberty, and open the prisons. But it is significant that Jesus stopped reading with the phrase "to proclaim the acceptable year of the Lord." He did not read the portion regarding "the day of vengeance of our God" because the day of vengeance had not yet come. Already a gap of almost 2,000 years has elapsed since Jesus read this passage. The day of God's vengeance still has not yet come. Prophetic perspective records events as if they were immediate. Through the revelation of the Holy Spirit Isaiah saw the whole plan of God. He saw Jesus coming to preach, bind up, proclaim liberty, open the prison, proclaim the acceptable year of the Lord, and bring the vengeance of God. Isaiah saw the events as you would look at distant ranges of mountains. The valleys in between the mountains are not visible until you climb to the top of the nearest range. Prophetic perspective reveals the whole plan of God from a distance. Sometimes events seem to appear as though they happen immediately in sequence. But as the prophecies are fulfilled there are often valleys of time between them as illustrated by this passage from Isaiah. Jesus has not yet fulfilled the Scriptures about the day of vengeance.

5. FIVE: THE CONDITIONAL NATURE OF PROPHECY Much Bible prophecy is conditional in nature. This means that God says He will do certain things based on the response of man. IF man does NOT listen to God's message, certain things will happen. IF man HEARS God's message and RESPONDS properly to it, then something else will happen. God said: At what instant I shall speak concerning a nation, and concerning a kingdom, to pluck up, and to pull down, and to destroy it; IF that nation, against whom I have pronounced, turn from their evil, I will repent of the evil that I thought to do unto them. And at what instant I shall speak concerning a nation, and concerning a kingdom, to build and to plant it, IF it do evil in my sight, that it obey not my voice, then I will repent of the good, wherewith I said I would benefit them. (Jeremiah 18:7-10) In much Bible prophecy, you must continue studying in order to discover man’s response to it because the fulfillment of prophecy is often conditional upon man's response. For a good example of this principle read the book of Jonah.

The Prophet Jonah revealed that God would destroy Ninevah in three days IF they did not repent. The destruction never came. The reason was that Ninevah responded properly to the message of God and repented of their sins.

6. OLD TESTAMENT PROPHECY Prophecy in the Old Testament centers on:
   - The people of Israel which was the nation God raised up through which to reveal Himself to the world. During the period of time when Israel was divided into two kingdoms this prophecy is directed to Israel and Judah. An example of prophecy to Israel is the book of Hosea. An example of prophecy to Judah is the book of Joel.
   - Prophecies to the nations surrounding the people of Israel. For example, prophecies are given regarding Babylon, Egypt, Tyre, Edom, etc. An example is the prophecy of Obadiah directed to the nation of Edom.
   - Prophecies concerning the coming Messiah, Jesus Christ. These are not contained in any one prophetic book. They are scattered throughout the Old Testament. A good example is Isaiah 7:14.
   - Prophecies concerning the entire world, its destiny, future events, the end of the world, and the end of time as we know it. The book of Daniel is an excellent example of this type of prophecy. The following chart condenses the general content of the books of prophecy in the Old Testament. As you use this chart be sure to remember the rule of double reference. Although prophecies were directed to certain nations and fulfilled in the immediate future, many of the prophecies spoke of even greater events in the far future:

7. NEW TESTAMENT PROPHECY There are many prophecies scattered throughout the New Testament. Most of these deal with future events which are to happen prior to the end of the world. For examples read the prophecies in Matthew chapter 24. There is only one book in the prophecy division in the New Testament, however. That is the book of Revelation. John, a Disciple of Jesus, was given this revelation from God through the Holy Spirit. It is a revelation of Jesus Christ: The Revelation of Jesus Christ, which God gave unto him, to shew unto his servants things which must shortly come to pass. . . (Revelation 1:1) John was told to. . . Write the things which thou hast seen, and the things which are, and the things which shall be hereafter. (Revelation

1:19) The Book of Daniel should be studied along with the book of Revelation as the two books relate to each other. There are many different interpretations given to the prophecies in the book of Revelation. Most of these interpretations center on the exact timing of certain events or specific details of these events. It is important to have a general understanding, however, of what the Bible says will happen. The following outline provides understanding of the major events: MAJOR EVENTS IN THE FUTURE.

- The Bible teaches that Jesus will return to earth for believers: John 14:2-3.

A. The Rapture: I Thessalonians 4:13-18 gives the most detail about Christ's return for believers. This return is called the rapture:

- Christ Himself will return: Verse 16.
- There will be a resurrection from the grave of those who were believers when they died: Verse 16.
- There will be rapture, which means "the act of taking a person from one place to another." Living believers will be taken from earth to meet Jesus: Verse 17.
- There will be a reunion between believers who have previously died, believers living at the time of Christ's return, and the Lord Jesus Christ: Verse 17.

8. The Tribulation: The Bible tells of a terrible time on earth which is called the tribulation.
   - The tribulation will last for 42 months or 1,260 days: Daniel 9:24-27.
   - It will be a very difficult time. There have been many difficult times in the world, but three things will distinguish the tribulation from all other times of trouble.
     A. First, it will be worldwide and not just local: Revelation 3:10.
     B. Second, people will realize the end of the world is near: Revelation 6:16.
     C. Third, the intensity of the trouble will be greater than ever before experienced: Matthew 24:4-14.
   - Its description: There are a series of judgments on earth during the tribulation. These are described in Revelation chapters 6, 8-9, and 16 and Matthew 24:4-14.

- The reason for the tribulation: The wickedness of man must be punished, Satan defeated, and Jesus acknowledged as Lord of all. This completes God's plan of the ages spoken of in Ephesians 1:8-9.

9. The timing of the rapture: Some people believe the rapture will occur before the tribulation and that believers will not have to experience any of this terrible time on earth. Others believe the rapture will happen midway through this period. Still other believe the rapture will happen at the end of the tribulation. The most common interpretation is that the rapture of believers will happen before the tribulation begins. The different views of the timing of the rapture result from various interpretations of prophetic information given in Revelation and other books of the Bible. What is most important is to know you are a true believer and will be ready to go with Jesus in the rapture when it does occur.
10. The Millennium: The Millennium is a period of 1,000 years after the tribulation during which Jesus will rule the earth in righteousness (Zechariah 14:9; Daniel 7:14). The city of Jerusalem will be the center of government (Isaiah 2:3). This period will end when Satan stages a last revolt against God (Revelation 20:7-9). God will send fire from heaven and end all opposition. Satan will be cast into the lake of fire for eternity. (Revelation 20:10).
11. Judgment: All created beings will be judged by God. This is known as the time of eternal judgment. Those who died as unbelievers will be resurrected to face judgment. Because they did not repent from sin and accept Jesus as Savior they will be condemned to eternity in Hell (Revelation 20:12-15). True believers who repented from sin and accepted Jesus as Savior will spend eternity in heaven in the presence of God (Revelation 21).

Step 14-What Further Analysis or Research I Need To Do, Next Time?

Step 15-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 16-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 15-Typological Study Method

Step 1-Tools Required for this Method

1. Study Bible
2. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
3. Topical Book
4. Exhaustive Concordance
5. Cross Reference

Step 2-Define Method

1. To understand how to do a typological study you must first understand the meaning of the word type. There are several verses in the Bible which explain the meaning of a Biblical type.
2. Key Verse for this chapter, Hebrews 10:1, speaks of the law having a shadow of good thing to come. "Shadow" is one word to describe a Biblical type. A shadow is an exact outline, although the details may be dim and sometimes it contrasts the thing that casts the shadow.
3. "Figure" is another word which describes type: Nevertheless death reigned from Adam to Moses, even over them that had not sinned after the similitude of Adam's transgression, who is the figure of Him that was to come. (Romans 5:14).
4. According to this verse, Adam was a "figure" of someone else who was to come. The meaning of the word "figure" is similar to that of type. Adam was a type of the Lord Jesus Christ who was to come later. The offering of sacrifices for sin in the Old Testament was a type of the final sacrifice for sin which was to be offered by Jesus in the New Testament:
5. The Holy Ghost thus signifying that the way into the holiest of all was not yet made manifest, while as the first tabernacle was yet standing: Which was a figure for the time then present, in which were offered both gifts and sacrifices that could not make him that did the service perfect, as pertaining to the conscience. (Hebrews 9:8-9) "Pattern" is another word describing Biblical

types: For if he were on earth, he should not be a priest, seeing that there are priests that offer gifts according to the law; Who serve unto the example and shadow of heavenly things, as Moses was admonished of God when he was about to make the tabernacle: for, See, saith he, that thou make all things according to the pattern shewed to thee in the mount. (Hebrews 8:4-5) Each of these words--shadow, figure, and pattern--all contain the idea we refer to when we speak of types. A type is a person or thing in the Bible which God used to represent some other person, thing, or event that would appear in the future. It was a shadow, a figure, or a pattern of what was to come.

Step 3-Method Explained

1. When we study these types it is called typological Bible study. We study a person, place, event, or thing and then we study the thing of which it is a type. In a way, types are like prophecy. They give an advance view of what is to come in God's future plan. Like prophecy, some types have been fulfilled. Others remain to be fulfilled. Although the type is important in itself, it has an even greater significance in the future person or event which it represented. Types are physical pictures of spiritual realities. For example, the experience of the children of Israel being healed from the bites of serpents is an actual Old Testament event. The Old Testament account in Numbers 21:6-9 tells that serpents bit the people and caused many of them to die. Moses made a bronze serpent and set it on a pole. Everyone who looked at the bronze serpent recovered from the serpent's bite. This event is a type of the death of Jesus: And as Moses lifted up the serpent in the wilderness, even so must the Son of man be lifted up; that whosoever believeth in Him should not perish, but have eternal life. (John 3:14-15) Many of the truths of the Bible are so simply stated that a child can understand them. There are other truths that are "hidden riches of secret places." They require more intense study to understand. The typical teachings of the Bible are like hidden riches. You must take time to search out these truths to discover the richest teachings of the Word of God. All types fall into four general classifications:
    - Persons.
    - Places.
    - Events (historical, ceremonial, etc.).
    - Material things.

Step 4-What Is Immediate Context?

Step 5-What is Whole Context?

Step 6-What Are The Facts Within Context?

Step 7-Write out a Personal Application

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 8-What Further Analysis or Research I Need To Do, Next Time?

Step 9-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarize its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 16-John MacArthur Way Bible Study

Step 1-Read or Listen Bible on repetitious basis

1. Take any Book of Bible and Divide the book equally into 4-8 chapters.
2. Read or listen every day for the next 30-90 days all those 4-8 chapters.
3. Read or Listen 4-8 chapters as many time per day as possible.
4. In 2.5 years you could listen or read entire New Testament.
5. Repetitious reading or listen leads to remember the text better.

Step 2-Tools need

1. Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study.
2. Treasure of scripture knowledge.
3. Handbooks.
4. Dictionary.
5. Cross References.
6. Atlas.
7. Doctrinal issues.
8. Books on custom.
9. Books on Culture.
10. Books on economy.
11. Books on political.
12. Books on geography.
13. Books on social.
14. Books on reconstructing the time.
15. Concordance.
16. Biblical greek dictionary.
17. Biblical Hebrew Dictionary.
18. Biblical Greek text.
19. Biblical Hebrew text.

20. Biblical Hebrew Grammar-Beginners to Advanced.
21. Biblical Greek Grammar-Beginners to Advanced.
22. Life and time of Jesus the Messiah.
23. Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles.
24. Topical Study.

Step 3-Old Testament-Read in narrative

1. Read or Listen Through Old Testament 1-100 times.
2. Themes of Old Testament.
    - Scripture is God's self disclosure. Note in mind what is true about God.
    - Scripture points out that God has Law which man violates.
    - Scripture reveal who keeps the law of God.
    - Saviour Coming.

Step 4-Every Scripture has one true interpretation

1. Exegesis - draw out of text.
2. Epexegesis-put in the text your own ideas (Do not Use it for interpretation).
3. Bible best interpreting itself.

Step 5-Things to avoid in interpretation

1. What does it mean to me? (This is not the question to ask while study, read or listen Bible).
2. Refrain to make a point for the correct interpretation (Taking text out of the correct context and interpreting).
3. Do not over spiritualise the text or do not over allegorise the text.
4. Do not use Bible and abused.
5. Avoid superficial study.
    - This is hard work.
    - Try to peace together the information.
    - Meaning is clear, but it takes hard work to get it.

Step 6-Observation

1. What does the text mean?
2. What the author intent (author intent) and divine author intent?
3. What it means to the author?
4. What it mean to the audience?
5. 5W1H?
6. What it not said in the passage?

Step 7-Literal Principle

1. Real people.
2. Real history.
3. Normal language.
4. Real meaning.
5. Interpret the scripture to normal language.
6. Figure of Speech.
    - These are the following books to use for Figure of Speech.
        I. **Glossary of Literary Terms by M. H. Abrams.**
        II. **Figures of Speech used in the Bible by E. W. Bullinger.**
        III. **Figure of Speech and exploration of used of idiomatic phrases in Conversation by Elizabet Jame Holt.**
        IV. **Figures of Speech by Christina Alm Arvius.**
        V. **Figures of Speech or Figures of Thought by Ananda Coomaraswamy.**
        VI. **The Princeton Encyclopaedia of Poetry and Poetics by Roland Greene.**

Step 8-Analysis of Logic.

Step 9-Analysis of Grammar.

Step 10-Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
    - Critical Discourse Analysis_ The Critical Study of Language.
    - Discourse analysis.
    - The Routledge handbook of discourse analysis.

Step 10- Analysis of Genre.

A. Open Figure Of Speech Folder. Use the Following Books for Analysis of Genre :
   - Literary Device.
   - FIGURES OF SPEECH - Biblical Research Journal.
   - Figures of Speech.

Step 11- Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context
4. Historical Principle.
   - Context is very important.
5. Cultural Context.
6. Custom Context.
7. Economic Context.
8. Geographical context.
9. Political context.
10. Religious context.
11. What world view they have?
12. How people think?
13. What problems they faced?
14. Perspective of people?
15. What is going on at the time?
16. What historical city?
17. What social pressure?
18. What cultural condition?
19. Where was tension?
20. What location?
21. What were crisis?
22. Grammatical Principle.
    - Look at the language.
    - Lexicography.
    - Find out the way words arrange.
    - Proposition pronoun.
    - Analyse the English Bible grammatically.

- Analyse the original Bible language (Greek, Hebrew and Aramaic)
- Word Meaning.
    A. Word meaning studies.
    B. Analyze word meaning.
    C. Syntax analysis- how the words constructed.
    D. Know greek and Hebrew languages.
- Look for main verb.

23. Logical Principle.
    - Definition.
    - Terms.
    - Arguments.
    - All logical principles involved analysing arguments.
24. Synthesis principle.
    - Scripture interpret scripture.
        A. Use Treasury of Scripture Knowledge.
    - Compare with related text.

Step 12-What Are The Facts Within Context?

Step 13-Implication

- What are implication of this?

Step 14-What Further Analysis or Research I Need To Do, Next Time?

Step 15-Write out a Personal Application.

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?

14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.
17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure."

Step 16-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 17-Inductive Bible Study Method

Step 1-Tools Required for this Method.

1. Study Bible
2. Exhaustive concordance
3. Treasury of Scripture Knowledge Topical Bible
4. A Bible dictionary and/or Bible encyclopaedia
5. A Bible handbook
6. A Bible atlas
7. Archaeology and Bible History by Joseph Free and Howard Vos (Zondervan)
8. The Bible and Archaeology by J.A. Thompson (Eerdmans)
9. Everyday Life in Bible Times (National Geographic Society)
10. Great People of the Bible and How They Lived (Reader's Digest Association)
11. Harper's Encyclopedia of Bible Life by Madeleine S. and J. Lane Miller (Books Sales)
12. The Oxford History of the Biblical World by Michael Coogan (Oxford University Press)
13. The Wycliffe Historical Geography of Bible Lands by Howard Vos (Hendrickson)
14. Church History
15. The Bible Knowledge Background Commentary, edited by Craig Evans, 3 vols. (Victor)
16. Chronological and Background Charts of the New Testament by H. Wayne House (Zondervan)
17. Chronological and Background Charts of the Old Testament by John Walton (Zondervan)
18. The IVP Bible Background Commentary: New Testament by Craig Keener (InterVarsity Press)
19. The IVP Bible Background Commentary: Old Testament by John Walton et al. (InterVarsity Press)
20. Manners and Customs in the Bible by Victor H. Matthews (Hendrickson)
21. The Zondervan Illustrated Bible Background Commentary: New Testament, edited by Clinton Arnold, 4 vols. (Zondervan)

22. The Zondervan Illustrated Bible Background Commentary: Old Testament, edited by John Walton, 4 vols. (Zondervan)
23. Several contemporary translations. (These enable you to see different renderings of the same material by able scholars.)
24. A Bible dictionary and/or Bible encyclopaedia.
25. A Bible handbook. (Look under the name of the book you are studying as well as under the writer and the city or people to whom the original might have been sent.)
26. Bible atlases
27. Historical
28. Geographies
29. Historical background books
30. Bible surveys
31. Later you may check yourself and your conclusions against what other reliable scholars have done
32. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
33. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)
34. Nelson's Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
35. New Testament Survey by Merrill C. Tenney (Eerdmans)
36. New Testament Times by Merrill C. Tenney (Baker)
37. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
38. Old Testament Times by R.K. Harrison (Baker)
39. Old Testament Today by John Walton and Andrew Hill (Zondervan)
40. Survey of the Bible by William Hendriksen (Baker)
41. A Survey of the New Testament by Robert H. Gundry (Zondervan)
42. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
43. Survey — get a bird's-eye view of the book.
44. Analysis — study everything in each chapter in detail.
45. Synthesis — put it back together again and draw some conclusions.
46. Later you may check yourself and your conclusions against what other reliable scholars have done
47. The Illustrated Guide to Biblical History by Kendall Easley (Broadman & Holman)
48. Nelson's New Testament Survey by Mark Bailey and Tom Constable (Nelson)

49. Nelson’s Old Testament Survey by Charles Dyer and Eugene Merrill (Nelson)
50. New Testament Survey by Merrill C. Tenney (Eerdmans)
51. New Testament Times by Merrill C. Tenney (Baker)
52. The Old Testament Speaks by Samuel J. Schultz (HarperSanFrancisco)
53. Old Testament Times by R.K. Harrison (Baker)
54. Old Testament Today by John Walton and Andrew Hill (Zondervan)
55. Survey of the Bible by William Hendriksen (Baker)
56. A Survey of the New Testament by Robert H. Gundry (Zondervan)
57. What the Bible Is All About: NIV Edition by Henrietta C. Mears (Regal)
58. Survey — get a bird’s-eye view of the book.
59. Analysis — study everything in each chapter in detail.
60. Synthesis — put it back together again and draw some conclusions.
61. Methodical Bible Study by R obert A. Traina (Zondervan) [Very advanced]
62. The Navigator Bible Studies Handbook (NavPress)
63. The New Joy of Discovery in Bible Study by Oletta Wald (Augsburg Fortress)
64. Personal Bible Study by William Lincoln (Bethany Fellowship)
65. Basic Biblical Interpretation by Roy Zuck (Victor)
66. Basics of Bible Interpretation by Bob Smith (Word Books)
67. Getting the Message by Daniel Doriani (Presbyterian & R eformed)\
68. Grasping God’s Word by Scott Duvall and Daniel Hays (Zondervan)
69. How to Read the Bible for All Its Worth by Gordon Fee and Douglas Stuart (Zondervan)
70. How to Understand Your Bible by T. Norton Sterrett (InterVarsity Press)
71. Protestant Biblical Interpretation by Bernard Ramm (Baker)
72. Studying, Interpreting, and Applying the Bible by Walter Henrichsen and Gayle Jackson (Zondervan)

Step 2-Choose The Subject or Book of the Bible

1. Choose the subject, person, word, or book of the Bible you want to study, and begin gathering reference materials for your research. The availability of reference tools will largely determine the scope of your study.

Step 3-List Your Reference Tools

1. List all the reference tools you have gathered to do this study (see Tools You Will Need above). This is to help you remember which books were most useful for the background material you researched and what books you may want to refer to in future background studies.

Step 4-Get Insights from Archeology

1. Read Number of books about archeology of the time, also Biblical Archeology.

Step 5-Obtain Insights from Geography

1. You will need to become familiar with the geography of Palestine and the Near East in general. This includes the types of land found there, the major mountains and hills, elevation and rainfall, the major bodies of water (seas, lakes, rivers), location of cities and countries, famous landmarks, and the borders of surrounding countries of the time you are studying.
2. As you study the New Testament, particularly Paul's missionary travels, you will need to become acquainted with the Mediterranean countries and cities that were active during the days of the Roman Empire.
3. In all of your study of biblical geography, you must continually ask this question: "What is the effect of the surrounding geography on what I am studying?"
4. In this step, list all the insights you can get on geography for the subject or book you are studying.

Step 6-Get insights from History

1. You should have a working knowledge of the chronology (order of historical events) of the nation of Israel in the Old Testament. Learn the periods of history of the Hebrew nation; find out the origin and history of famous cities; learn the divisions of Jesus' ministry; be well versed on the history surrounding Paul's missionary travels. It is also helpful to know what major events were going on in other parts of the world during the time you are studying, in order to have a proper perspective on what God was doing in the world.
2. You might ask yourself, "What caused this particular event that I am studying? How did it affect the people involved? How did it affect the passage I am studying?" Be especially aware of events that illustrate God's sovereign control over the progress of history.
3. In this step, list all the insights you can get on history surrounding the subject or book you are studying.

Step 7-Discover Some Insights from Culture

1. If you are to understand what went on in Bible times, you need to learn about the total lifestyle of the ancient people in the Scriptures. Here are some areas you can research while asking yourself, "How do all these things affect the message and the people about whom I am studying?"
    - Types of clothing people wore.
    - Professions and trades in biblical times.
    - Music in the Bible.
    - Architectural styles in the Near East.
    - Manners and customs in Scripture.
    - Recreation in ancient times.
    - Family life in the Middle East.
    - Art in the Bible.
    - Languages and literature of surrounding nations.
    - Religious ceremonies in Israel and among pagan neighbours.
    - False religions of the area.
    - Weapons and tools used by the people.
2. In this step, list all the insights you derive from the way people lived in their cultures.

Step 8-Research Insights from Political environment

1. Much of what happened in Israel in the Old Testament and in the R oman world of Jesus, Paul, and the apostles is related to the political environment of the times.
2. Kings, emperors, rulers, and other powers governed the people of the time. Israel, for example, spent much of its history under foreign rule and even in exile. These other nations and political systems were bound to have an effect on the way God's people lived. Recognize, however, that God is always in control of the political situation. Even King Nebuchadnezzar acknowledged this fact (Dan. 4:34 – 35).
3. Egypt, Philistia, Assyria, Babylon, Persia, Greece, and Rome all played a major part in the Bible. What were these nations like? How did they affect Israel or the New Testament church? Many of the prophets' messages can only be understood in light of their current political climate.
4. In this step, write down all the insights you can from your research into the political conditions of the time period you are studying.

Step 9-Summarise Your Research

1. Now go back over Step Three through Step Six, and from the data you have gathered, summarize your research by answering these two questions:
    - How does this background information help me understand better what I am studying?
    - What influence did any of these factors have on the subject (or book) that I am studying?

Step 10-Read the Book

1. This first step may seem obvious, but some people spend all their time reading about the Bible rather than reading the Scripture text itself. The only tools needed for this first step are your study Bible and several recent translations. Do not read any Bible surveys, handbooks, or commentaries at this point. Follow these seven suggestions:
2. Read through the book at one sitting. Except for the Psalms, the longest book in the Bible is Isaiah, and it can be read in three or four hours. Most of the other books, particularly those in the New Testament, can be read in much less time. If you have to break up your reading, try to finish a book in no more than two sittings. (For example, read Isaiah 1 – 39 at one sitting, then Isaiah 40 – 66.) You will be amazed at what you begin to see in Scripture as you do this.
3. Read through the book in a recent translation. This will enable you to understand what you are reading better, because you will be doing your reading in contemporary language.
4. Read through the book rapidly, ignoring the chapter divisions. Remember that the chapter divisions and verses were not in the original writing; they were added much later for convenience. Right now your purpose is to get the flow of the book and feel the pulse of the writer. Don't be concerned with the details at this stage (you will do that in the Chapter Analysis Method, chapter 10), but read the book quickly to get its main thrust.
5. Read through the book repeatedly. Repeat the process of reading as many times as you can. (Obviously, you will not be able to read the book of Isaiah as many times as the book of Colossians in a given time frame.) Each time you read the book through, you will notice some new things and the overall picture will become clearer and clearer. The more times you read a book through, the better you will be able to understand it. So stay with it.
6. Read through the book without referring to commentaries or someone else's notes. It is good to read in a Bible in which you have not made any notes yourself. Otherwise, when you see the notes you may have written (your own or others'), your mind will naturally fall back into that pattern and you will be hindered from seeing new things. After you have finished Step One, you may begin consulting with reference helps.
7. Read through the book prayerfully. Ask God to speak to your heart and open your eyes that you may see wonderful things in his law (Ps. 119:18).

8. Read through the book with pen or pencil in hand. As you begin reading the second or third time through, begin taking notes and making observations on what you are reading (see Step Two and the Book Survey Form).

Step 11-Make notes on what you Read

1. As you read through the book (see Step One), write down your impressions and the important facts you discover. Make these notes on a separate piece of paper or on the Book Survey Form found at the end of this chapter. Look for the following nine items:
2. Category: Is the book history? Poetry? Prophecy? Law? A biography? A letter?
3. First Impressions: What is the first impression you get from the book? What do you think is the purpose of the writer? What "feel" do you get from reading it?
4. Key Words: What are some of the significant words the writer uses? What words are repeated the most? What word or words is he emphasising?
5. Key Verse: What seems to be the key verse (if any)? What ideas or phrases are repeated that may show his main thought? What is the writer's key statement?
6. Literary Style: Is the book a narrative? A drama? A personal letter? A discourse? Poetry? A combination of narration and poetry? Does the writer use figurative speech? Is he using a logical argument?
7. Figure of Speech.
    - These are the following books to use for Figure of Speech.
        I. **Glossary of Literary Terms by M. H. Abrams.**
        II. **Figures of Speech used in the Bible by E. W. Bullinger.**
        III. **Figure of Speech and exploration of used of idiomatic phrases in Conversation by Elizabet Jame Holt.**
        IV. **Figures of Speech by Christina Alm Arvius.**
        V. **Figures of Speech or Figures of Thought by Ananda Coomaraswamy.**
        VI. **The Princeton Encyclopaedia of Poetry and Poetics by Roland Greene.**

8. Analysis of Propaganda
    - **These are the following books to use for Review and Analysis of Propaganda:**
        I. **All Art of Propaganda by George Orwell.**
        II. **Computational Propaganda by Samuel Woolley.**
        III. **Fake News, Propaganda and plain old lies by Donald Barclay.**
        IV. **How Propaganda Works by Jason Stanley.**
        V. **Propaganda and Persuasion by Garth Jowett.**
        VI. **Media, persuasion and Propaganda by Marshall Soules.**
        VII. **Primetime Propaganda by Ben Shapiro.**
        VIII. **Propaganda Studies by Jonathan Auerbach.**
9. Emotional Tone: Is the writer angry? Sad? Happy? Worried? Excited? Depressed? Calm? How do you think his hearers must have felt when they received this writing? How does it make you feel?
10. Main Theme(s): What is the main theme? Is there more than one? What is the writer saying? What is his major emphasis?
11. Structure of the Book: Are there obvious divisions of thought in the book? How is the book organised? Around people? Events? Places? Ideas? Time spans?
12. Major People: Who are the principal personalities in the book? Which people are mentioned the most, and what parts do they play in the book?

Step 12-Analysis of Logic.

Step 13-Analysis of Grammar.

Step 14- Analysis of Genre.

A. Open Figure Of Speech Folder. Use the Following Books for Analysis of Genre :
    - Literary Device.
    - FIGURES OF SPEECH - Biblical Research Journal.
    - Figures of Speech.

Step 15- Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context

Step 16-Initial Survey

1. Read the entire book at one sitting to identify the theme (subject) of the book. Choose a title that summarises the theme. You will use this title on the Book Study Chart. This will also become the title of your outline.
2. Determine the purpose for which the book was written, to whom it was written, and the author.
3. Some books state the name of the author but for the names of others you will need to consult an outside Bible study resource.* Each author had a special reason for writing under the inspiration of the Holy Spirit. This purpose is usually reflected in the content of the book.
4. Determine the geographic setting of the book. This is where the events occurred. Record this on the Book Study Chart.
5. Summarise the basic life and ministry principle in one sentence. This is the basic truth of the book which is applicable to your life or ministry. There are many principles taught in a single book, but try to determine the most important for this summary statement. Remember, the chapter divisions in the Bible are not divinely inspired. They were made by man for ease in locating specific passages in the Bible. When you read the entire book without chapter divisions you are reviewing the message as it was originally given.
6. In this first reading do not be concerned with details. Survey the book for general information: Theme, author, purpose, to whom, geographic setting, and basic life and ministry principle. Read quickly to gain an overview of the entire book. Do not stop and analyze what you are reading. You will do that later.

Step 17-Book Study Chart

1. Read the book a second time. Note the major divisions of the book. These divisions may be determined by subject matter, events, biographical material, geographical settings, or other such factors.
2. Create titles for each chapter of the book. The chapter title should reflect the general content of a chapter but it should not be so general that it could fit any chapter of the Bible. Think of titles as handles with which to grasp the content of the chapter. Keep them short so they are easy to remember. Enter these chapter titles on the Book Study Chart.

3. Select the key verse of the book. The key verse should be one that best summaries the purpose or content of the book. Enter the reference on the Book Study Chart. As you read, list the names of major characters in the space provided on the chart. This list will provide a selection from which to do biographical studies. You will learn how to do such studies later in this course.
4. Record key words and phrases on the chart. Key words and phrases are those basic to understanding the book. They are often repeated frequently or explained in detail in the book. You can use this list for word studies which you will learn how to do later in this course.

Step 18-Do Background Study

1. Find out the historical and geographical setting of the book. Into what background does the book fit? You can use the following questions to help you find some of the facts. Also use the ideas presented in the Book Background Method of Bible.
2. Study (chapter 8). Many of the answers may be found right in the book itself, so look there first. If you can't find the answers in the text alone, then check outside references (see Tools You Will Need earlier in this chapter).
    - What can I learn about the writer(s)?
    - When was the book written? (Date).
    - Where was the book written?
    - To whom was the book written? Who were they? Who was he? Who was she? (Find out about their historical and geographical backgrounds.).
    - Why was the book written? (Investigate the circumstances related to the writing.).
    - What other background information sheds light on this book?
    - What is the place of this book in the Bible? Is it a bridge between various periods of history?
    - What are the geographic locations mentioned in the book? Where are they? (Draw a map if it will be helpful to you.)

Step 19-Make Horizontal chart of the Book's Content

1. One of the exciting steps in doing a book survey is making a horizontal chart. This is a diagramed layout of a book's contents on one or two sheets of paper. The value of such a chart is that it enables you to lay out visually the book's contents and divisions. It gives you a new perspective of the book. The three parts to a simple horizontal chart are the major divisions of the book, chapter titles, and paragraph titles. Why make a horizontal chart? You gain several benefits in this study by making one.
    - It helps you summarise the main ideas and contents of a book.
    - It enables you to see the contents of an entire book at a glance.
    - It helps you discover the relationships between chapters and between paragraphs.
    - It makes you aware of ideas repeated in several places in the book.
    - It serves as a memory device to help you recall a chapter's content quickly.
    - It enables you to think through a book and remember it. Preparation for making a horizontal chart. You need three tools to make a simple horizontal chart:
    - A Bible with paragraph divisions. Many recent versions have divided the text into paragraphs to enable you to see the units of thought. You have to know these in order to make the chart.
    - A pencil (or pen) and a ruler.
    - A blank sheet of paper, preferably 8 x 11 in size. Try to fit your chart on one sheet of paper so you can see the entire structure of the book at a glance. When you are working on a long book (e.g., Isaiah, Genesis, Psalms), try to use as few sheets as possible. In using more than one sheet, be sure to use the same scale so you can match the sheets. How to make a horizontal chart. Go through the following four steps for each chart you make.
2. On a blank sheet of paper, make as many vertical columns as there are chapters in the book. For longer books, make the columns narrower and abbreviate what you write in them and use two or three sheets of paper as needed.
3. Read through the book again and find its major divisions. Record these divisions in as few words as possible at the top of your chart (see the Sample Filled-out Form).

4. Read through the book again and think of a title for each chapter (or group of chapters in a longer book). Record these at the top of each column directly below the major divisions. Irving Jensen has suggested five characteristics of good chapter titles (Independent Bible Study, Moody Press, p. 108).
    - Preferably use one word, not more than four.
    - Use picturesque words that help you visualise the contents.
    - Use words taken directly from the text if possible.
    - Use words that have not been used previously as chapter titles in your study of other books.
    - Use words that tell you where you are in the book.
5. Read through the book once more and do the same thing to all the paragraphs in your book. Try to relate the paragraph titles to the chapter title under which they fall. As you become proficient in this exercise, you may add things to your charts that personalise your study.

Step 20-Make Tentative Outline of Book

1. After you have summarized the contents of the book on a horizontal chart, you are ready to make a simple tentative outline of the book. Later on, in the Book Synthesis Method of Bible Study (chap. 11), you will make your final, detailed outline of the book. In the current method you should merely outline the high points of the book and show their relationship with one another. Here are some suggestions:
2. Refer to your horizontal chart for ideas in outlining. Often your chart will readily show the natural organisation of the book's contents.
3. Outline from the major to the minor. Look for major divisions of the book first, then the subdivisions (which could be the chapters themselves), and finally the important points that fall under the subdivisions (which could be the paragraphs). In longer books you may need to have further subpoints under these.
4. Watch your paragraph divisions for clues in outlining. Since the paragraphis the basic unit of thought in writing, you can use the paragraph divisions as a guide in designing the outline of the chapter. Write a summary statement for each paragraph, then use those statements as the major points of your outline.
    1. After you have done your own outlining, compare yours with as many other outlines as you can. Check the reference books available to you and compare your work with those writers. Don't be concerned if your outline does not match these exactly, for often there are many ways to outline a book. You will discover that even notable scholars disagree with each other.

Step 21-Select Chapter Title

1. Record on the Chapter Study Chart the name of the book and chapter number you are studying. Read the entire chapter and give it a title which reflects its content. (If you have done a book survey, you will have already selected a chapter title. Chapter Eleven on book study explains how to select chapter titles).

Step 22-Mark Paragraph Divisions

1. Mark the paragraph divisions within the chapter. In some Bibles the paragraphs are marked with a special paragraph mark ( ). In other Bibles they are marked with a boldface verse number. (Boldface means that the number is darker than the numbers in front of other verses.) If your Bible has neither paragraph marks or boldface markings then you must determine the paragraph divisions yourself. To do this you must know the definition of a paragraph: "A paragraph is a group of verses which relate to the same subject matter. When the subject changes, then a new paragraph has begun."
2. Mark the paragraph divisions in your Bible by drawing a circle around the verse number where each paragraph begins.

Step 23-Create Chapter Study Chart

1. On the Chapter Study Chart record the title of the chapter. List the verses of the paragraph divisions (see example). Then give each paragraph a title which reflects the content of that paragraph. Use the column with the heading "Notes" to record your thoughts about the relation between parts of the chapter (see example). These notes will assist you in creating the chapter outline.

Step 24-Write out Chapter Summary

1. You begin this step by reading and rereading the chapter many times. All you are doing here is making general observations on the chapter as a whole. After you have read it through several times, describe the general contents in one of the ways about to be described. Do not try to interpret what you see at this time, but merely aim to become familiar with the chapter. You may summarize it in one of the following ways:
2. Paraphrase it. The simplest way is just to rephrase the chapter in your own words. Summarize it in such a way that you could read your paraphrase to

another person. You can check some recent paraphrase versions of the Bible for examples of this.

3. Outline it. Another simple way to summarize is through an outline that follows the paragraph divisions of the chapter. Give a title to each paragraph, then place some subpoints under each one.
4. Rewrite it without the modifying clauses and phrases. Use just the subjects, verbs, and objects in your summary. This is a great way to summarize some of Paul's writings, for example, where run-on sentences (especially in the King James Version) are hard to understand because of their complexity. After you have completed your chapter summary, give a title to the chapter, using either your title from the book survey or a new one that occurred to you during this study.

Step 25-List Your Observations

1. This step begins the verse-by-verse analysis of the chapter. You start with the activity of observation. In this step you are looking in detail at every sentence and word and then writing down everything you see. You are trying to answer the question, "What does it say?" Before you can begin to interpret the meaning of a verse or passage, you must first look at what it actually says. The purpose of observation is to saturate yourself completely with the contents of a Bible passage. The mark of good Bible students is that they have trained themselves to observe things in the text that others overlook.
2. Overlooking biblical facts — reasons why. There are three reasons why we often overlook things and miss so much in the biblical text: (1) We rush through a passage too quickly. So we need to slow down and not indulge in speed-reading.
3. (2) We don't write down our observations. Louis Agassiz, a 19th-century professor of zoology at Harvard who taught his students the art of observation, used to say, "A pencil is the best eye." We need to write down what we see, and then we will begin seeing more. (3) We give up too soon. The longer we squeeze a lemon, the more juice we get out of it — to a point. But unlike lemons, the Bible never goes dry. We can study a text a hundred times and never exhaust the riches that are in it. So we shouldn't give up too soon; rather, we should keep on looking — the longer the better.

4. Asking questions. As has already been discussed, the secret of good Bible study is learning to ask the right questions (see the Introduction at the beginning of this book). The number of questions you can ask of a text of Scripture increases in proportion to your willingness to stick with it. As you continue growing in Bible study skills, the type and number of questions you ask will improve and you will be able to observe more and more. The key to good observations, then, is a combination of diligence, patience, asking many questions, and writing down everything you see.
5. To help you in your observations, appendix F lists 30 ideas from which you can select the ones that will suit your study.

Step 26-Ask Interpretation Questions

1. After observing all you can in the passage under study, you are ready to move on to interpretation. This step involves asking questions about meaning, then trying to find answers to them. In this exercise you discover the biblical writer's purpose and message by uncovering what he means by his idea. Interpretive questions include asking what or why. Some examples:
    - Why did the writer say this?
    - What is the meaning of?
    - What is the significance of?
    - What is the implication of?
    - Why is this important?
2. You should be able to think of many other interpretive questions to ask. Never think that any question is too silly or dumb. Always write every question down on your form even though you may not find an answer to it. Later on, in studying another chapter, you may be able to answer it; if so, come back to this chapter's form and fill in the answer. Remember that the more questions you ask, the more you will draw out of the text.
3. Listing difficulties. When you are writing down your questions, it is a good idea to include any difficulties you have in understanding what is being said. Two common types are personal difficulties — questions you would like answered in the future, or items for future study, and possible difficulties — matters that don't bother you at this time, but would be good to study so you can help others who might be bothered by them.

4. Finding the right meaning of the text. After you have listed all your questions of interpretation, you need to start finding some answers. There are several ways to do this.
5. Check the context. You should always start here, for often the answers to your questions will be found in the verses preceding or following the text. Always interpret a passage in light of its context. To review the context, you may have to go back to your observations or your book survey to answer these questions:
    - Who is speaking?
    - Who is being spoken to?
    - When is it being spoken?
    - Where is it being spoken?
    - What is the occasion or circumstance?
    - What is the main subject of the message?
    - Is the aim of what is being said revealed?
    - What other background material clarifies this statement?
6. You can avoid a great deal of misinterpretation by first checking out the context of a verse.
7. Define the words and phrases used. You must interpret your text according to the correct and proper meaning of the words. Look up the important words in a Bible dictionary, word study set, or English dictionary.
8. Study the grammar and structure of the sentences. Sometimes a problem of interpretation can be cleared up by diagramming a sentence or by understanding what grammatical usage the writer intended in the paragraph. Compare several translations of the text. Use different recent versions of the Bible to see how the various translators rendered a particular word, phrase, or paragraph.
9. Study the background of the text. Interpret your text in light of the historical, cultural, geographic, economic, social, and political backgrounds of the book, including the current events of that time. This shows you the value of doing a book survey study before attempting a chapter analysis study. Use your reference tools to check on the background, the writer's purpose in writing the book, and other pertinent factors.

10. Compare your text with other passages of Scripture. This next step — correlation— will give you some answers to interpretive questions as you compare Scripture with Scripture.
11. Consult a commentary as a last resort. If you have tried diligently to find the meaning of the text yourself and your cross-references have not helped you, consult the works of great Bible scholars. There is a place for commentaries in Bible study, but it comes only after you have done your own work. Compare your interpretation with the writings of devout Christians and see if yours agrees with theirs. If you have a correct interpretation, you may be sure God has shown it to some other sincere Bible students in the past. If you can't find anyone who agrees with you, you have probably got a wrong interpretation.
12. Ask the six vital observation questions: What? Why? When? How? Where? Who?
13. Look for key words.
14. Look for repeated words and phrases.
15. Look for questions being asked.
16. Look for answers being given.
17. Look for commands.
18. Look for warnings.
19. Look for comparisons — things that are alike.
20. Look for contrasts — things that are different.
21. Look for illustrations.
22. Look for causes and effects and reasons for doing things.
23. Look for promises and their conditions for fulfilment.
24. Look for progression from the general to the specific.
25. Look for progression from the specific to the general.
26. Look for steps of progression in a narrative or biography.
27. Look for lists of things.
28. Look for results.
29. Look for advice, admonitions, and attitudes.
30. Look for the tone of the passage — emotional atmosphere.
31. Look for connectives, articles, and prepositions.
32. Look for explanations.
33. Look for Old Testament quotes in the New Testament.
34. Look for the literary form.

35. Look for paradoxes.
36. Look for emphasis through the use of space — proportion.
37. Look for planned exaggerations or hyperboles.
38. Look at the grammatical construction of each sentence.
39. Look for the use of the current events of the times.
40. Look for the force of the verbs.
41. Look for anything unusual or unexpected.

Step 27-Correlate Your Chapter with Other Scriptures

1. This step involves finding cross-references for the verses of your chapter in order to further explain the meaning of the text. It is based on the principle of interpretation that says, “The Bible interprets itself; Scripture best explains Scripture.” You can often interpret passages that are not clear by passages that are. Ask yourself, “How do other Scriptures relate to and explain this one?” Steps in cross-referencing. Here are some practical ways to correlate verses:
2. First, look for cross-references within the same book you are studying. This is internal correlation.
3. Second, compare statements in other writings by the same author. This is external correlation.
4. Then, compare with other books in the same testament.
5. Finally, compare references in all of Scripture. You can find cross-references in a study Bible or reference Bible or by looking up similar words in a concordance. Types of cross-references. There are several different types of cross-references, including the following:
    - The pure cross-reference. This is sometimes called the parallel cross reference because it says almost exactly the same thing as the verse you are analyzing.
    - The illustrative cross-reference. This type, which may involve a real event or person in history, illustrates what the verse you are studying is saying.
    - The contrasting cross-reference. This type says the opposite of what your verse says. It may look like a contradiction, but it is actually approaching the subject from a different viewpoint. One word of caution: Be sure to check the context of the verses you choose as cross-

references. Otherwise you may be making them say what the writer did not say.

Step 28-List Some Possible Applications

1. The last part of the verse-by-verse analysis is to write down some possible applications. Remember that your goal in Bible study is not just interpretation but application. Because of the many applications a chapter may have, you will only be listing them here. Later on, in Step Seven, you will choose one of these to write out and to work on for a week. You have already seen that you cannot work on more than one application per week. It is better to record just one and fully apply that truth to your life than to write down several applications and then fail to implement any of them.

Step 29-Write Down Some Concluding Thoughts

1. Go back over the results of the first five steps, review them carefully, and write down some concluding thoughts on the chapter. These can include additional observations, some of your interpretations, themes you have discovered, possible topics and people you want to study in the future, words you may want to do a word study on, and any number of other thoughts that come to mind.

Step 30-Observe the Details

1. The paragraphs in a chapter can relate to each other in different ways. Here are some special things to observe as you study paragraphs:
2. Connectives:Words called "connectives" are very important. They reveal relationships within and between paragraphs. The word "but" is a connective and introduces a contrast. For example: But these speak evil of those things which they know not; But what they know naturally, as brute beasts, in those things they corrupt themselves. (Jude 1:10).
3. There is a contrast in this paragraph. False teachers speak evil of things they do not know BUT they also corrupt the things they do know. The verse begins with the word "but" which should make you look back to verse 9 to see what the contrast is: Yet Michael the archangel, when contending with the devil he disputed about the body of Moses, durst not bring against him a railing accusation, but said, The Lord rebuke thee. (Jude 1:9) Verse 10 contrasts false teachers who speak evil of dignities with the archangel Michael. Even though he held a great position, he did not accuse the devil but said "The Lord rebuke thee." The connective word "or" indicates a contrast. For example: For God shall bring every work into judgment, with every secret thing, whether it be good OR whether it be evil. (Ecclesiastes 12:14) Other connective words to watch for are "like" and "as." Instead of a contrast these words show comparisons between things. For example in the following verse Satan is compared to a lion: . . . the Devil AS a roaring lion, walketh about, seeking whom he may devour. (I Peter 5:8) The word "and" is another connective. It adds to what has just been stated: Like wise also these filthy dreamers defile the flesh, despise dominion, AND speak evil of dignities. (Jude 1:8) The word "if" introduces a conditional statement. Many of the promises and prophecies of the Old Testament are stated this way. They tell what God will do IF (on the condition that) His people make a certain response: IF my people, which are called by my name, shall humble themselves, and pray, and seek my face, and turn from their wicked ways, then will I hear from Heaven and will forgive their sin, and will heal their land. (II Chronicles 7:14) The word "that" sets forth a purpose. It tells that something happened "in order that" a certain purpose would be accomplished: And He came and dwelleth in a city called Nazareth; THAT it might be fulfilled which was spoken by the prophets, He shall be called a Nazarene. (Matthew 2:23) Watch also for the connecting words "for,

because, therefore." These words introduce reasons and results: But when He saw the multitudes, He was moved with compassion on them, BECAUSE they fainted, and were scattered abroad, as sheep having no shepherd. (Matthew 9:36) The words "in, into, and with" are also important connectives. They also indicate relationships between concepts: He turned the sea INTO dry land and they went through the flood on foot: there did we rejoice in Him. (Psalm 66:6).

4. General Structure: As you study paragraphs observe the arrangement of ideas and how the verses relate to each other. Sometimes the author makes a general statement, then explains it with examples. Other times he lists a series of ideas and then summarizes with a general statement. In the example given later in this chapter, you will note that Jude wrote several paragraphs listing characteristics of false teachers. He then gave Old Testament examples which illustrated what he was teaching.
5. Repetitions: Each word of the Bible is inspired by the Holy Spirit. When words or phrases are repeated it is because they are especially important. The Holy Spirit inspired the writers to repeat words and phrases in order to fix them in your memory. The words "verily, verily" are an example of this. When Jesus preceded a statement with these words it was like an announcer saying "May I have your attention please. I have an important announcement to make." Study in detail any words, phrases, or verses that are repeated.
6. Questions And Answers: It is also important to observe the questions and answers of the Bible. Often an author will introduce a subject by asking a question. He will then explain this question and give answers which relate back to the question. A good example of this is Romans 6. Read the entire chapter. Note the questions in verses l-3 and the answers developed throughout the chapter.
7. Introductions: Watch for paragraphs that introduce the subject that is to follow. For example, in the book of Jude which you studied in the last chapter verse 3 introduces the material to follow: Beloved, when I gave all diligence to write unto you of the common salvation, it was needful for me to write unto you, and exhort you, that ye should earnestly contend for the faith which was once delivered unto the saints. (Jude 1:3) This introductory paragraph explains the purpose of his writing. He is exhorting them to earnestly contend for the true faith. The remainder of the chapter gives reasons for this exhortation. There

are false teachers creeping into the church who are trying to turn them from the true faith.

8. Summaries And Conclusions: Be alert for paragraphs that summarize an entire passage, chapter, or even a book. For example, the book of Ecclesiastes contains one verse which summarizes the whole book. In Ecclesiastes the writer has described his quest for life apart from God. His final conclusion is: Let us hear the conclusion of the whole matter: Fear God, and keep His commandments: for this is the whole duty of man. For God shall bring every work into judgment, with every secret thing, whether it be good, or whether it be evil. (Ecclesiastes 12:13-14).
9. Progressions In Thought: When studying paragraphs, watch for progressions in thought. Note the following paragraph: And beside this, giving all diligence, add to your faith virtue; and to virtue knowledge; And to knowledge temperance; and to temperance patience; and to patience godliness; And to godliness brotherly kindness; and to brotherly kindness charity. For if these things be in you and abound, they make you that ye shall neither be barren or unfruitful in the knowledge of our Lord Jesus Christ. But he that lacketh these things is blind, and cannot see afar off, and hath forgotten that he was purged from his old sins. (II Peter 1:5-9) There is definite progression in this passage. We are to add one thing to another until we become fruitful.
10. Literary Form: Literary form refers to how a passage is written. Some passages are in narrative or story form. This means they read like a story. Other paragraphs are in poetic form (poems) like the passages in the book of Psalms. Some paragraphs are parables which are short stories illustrating a spiritual truth. Some paragraphs are in dramatic form. For example, the Song of Solomon contains dramatic as well as poetic form. Discourse form is much like a sermon. It is a series of paragraphs giving instruction on a certain subject.
11. Key Words: Identifying key words will help you understand the meaning of a paragraph. Key words are those important to the meaning of a paragraph. Often they are words which are repeated. Especially note key words which you do not understand. These words can be studied in a word study. (You will learn how to do this later in this course). For example, read the following verse: For there are certain men crept in unawares, who were before of old ordained to this condemnation, ungodly men, turning the grace of our God into

lasciviousness, and denying the only Lord God and our Lord Jesus Christ. (Jude 1:4) Do you know what the word "lasciviousness" means? It is an important word in this paragraph because it describes false teachers. One of their characteristics is that they have turned the grace of God into lasciviousness. This word is an example of a key word to study.

12. Grammatical Construction: The word "grammar" refers to parts of speech or words that fit together to make up sentences and paragraphs. Watch for words which are called verbs. These are words that show action telling what someone did in the past, is doing in the present, or will do in the future. They also are used in commands: GO ye into all the world and PREACH the Gospel to every creature. (Mark 16:15) The words "go" and "preach" are action words. They are verbs. They are commands for us to obey. A noun is a word that names a person, place, or thing. The words in capitals below are nouns: JUDE, the servant of JESUS CHRIST, and brother of JAMES... (Jude 1:1) Nouns tell who and what is involved and where the action took place. A pronoun is a word that replaces or stands for a noun. The words "him" and "her" are examples. Instead of saying “The Holy Spirit inspired Jude to write the book" you could say "The Holy Spirit inspired HIM to write the book." The word "him" is a pronoun standing for the noun Jude.
13. Adjectives and adverbs are important parts of speech also. Adverbs tell something about a verb. It tells how something happened. For example, in the sentence "He ran quickly," the word "quickly" is an adverb because it tells how he ran. An adjective describes a noun or pronoun. If we said "Jude was tall," the word "tall" is an adjective which describes Jude. If you have not studied parts of speech before this may seem confusing at first, but you will soon learn to identify these as you practice. Parts of speech are important because they identify people, places, and things. They tell who did something, where, when, and why. They tell how things were done and what was, is, or will be done. They also provide descriptions and details which increase understanding of the subject matter.

Step 31 Create Paragraph Study Chart

1. By studying paragraphs in detail as described in Step Two, you will identify certain paragraphs that relate to each other. Their relationship may be contrasts, comparisons, progressions, or otherwise. Select these for paragraph study. You will create a chart to summarise your study of these paragraphs. Select a general title for your chart which reflects the relationship of the paragraphs or the subject which they concern. The chart will also include the paragraph titles and divisions made during the chapter study.
2. Record on the chart the book, chapter, and paragraphs studied. Use margins of the chart to make observations and applications.

Step 32 Create Paragraph Outline

1. Use the chart to help you create an outline of the paragraphs. The outlines you create on chapters and paragraphs will help you as you share God's truth with others because they help you present what you have learned in an orderly way.

Step 33-Write Out a Personal Paraphrase

1. Write out the verse in your own words. Do not use one of the modern paraphrases except to get the idea of how to do it. Stay true to the verse you are paraphrasing, and try to condense rather than expand it.

Step 34-List some Questions, Answers and Observations

1. In column 3 of the Chapter Analysis Form at the end of this chapter, list any questions you have relating to words, phrases, persons, topics, and doctrines in that verse. Write down any answers you can find and also record any observations you have. Mark these as follows:
    - Q = Question.
    - A = Answer.
    - O = Observations.

Step 35-Find Some Cross References for Each Verse

1. Using the cross-references from your study Bible or from Scripture memory, write down some cross-references (at least one) for the verse you are studying. Identify the word or phrase you are cross-referencing at the end of this chapter. Use a concordance if you do not have a cross-referenced Bible.

Step 36-Record any insights you get from each verse

1. Having thought through the words, phrases, and concepts in the verse, record any insights that you get from them. These could be further observations, words and names that you have looked up and defined, or any other thought that comes to you. Let your imagination go and be as creative as you can in this fifth column, called Personal Application, in the form at the end of this chapter.

Step 37-Write down a brief personal application for each verse

1. Because of the number of verses in your study, you will not be able to design an application project for each verse. Instead, just try to record some devotional thoughts that come to you from each verse. Later, in a devotional Bible study, you can pick one of the thoughts and plan to work on it. Or, if a particular verse seems to meet an immediate need, go ahead and write out an application that is possible, practical, personal, and measurable.

Step 38-Reread the Book

1. Reread the book several times. Read it at one sitting, in a recent translation, rapidly, repeatedly, prayerfully, without referring to commentaries, and with pen or pencil in hand.

Step 39-Write Out a detailed, final outline

1. Compare the horizontal chart and tentative outline you created in your book survey with the passage summaries you created in your chapter analysis studies. Based on this comparison and your recent readings, write out a detailed, final outline of the book. Merrill Tenney gives an excellent example in his book on Bible study methods.

Step 40-Write down a descriptive Book Title

1. From your horizontal chart in the book survey and your detailed, final outline in Step Two, write down a descriptive title for the book you have just studied. Think up an original title that describes in a few words what the book is all about. You might also consult your chapter titles and form a synthesis of them.

Step 41-Make summary of your insights

1. Review and compare the concluding thoughts in each of your chapter analysis studies and summarise what you believe are the major themes and conclusions of the book. Do not refer to commentaries at this point, for these should be your own insights into God's Word. These insights could also include observations gained from your new readings.

Step 42-What Further Analysis or Research I Need To Do, Next Time?

Method 18-How To Understand and Apply HERMENEUTICS

Step 1. Open Hermeneutic Folder. Decide, Which Of the Following Hermeneutics Books I will Use For Analysis Biblical Text.

- **Listen, Follow and Apply Every Step of the Book How To Understand and Apply The New Testament By Andrew David Naselli.**
- **Listen, Follow and Apply Every Step of BIBLICAL HERMENEUTICS By Milton Terry.**
- **Listen, Follow and Apply Every Step of Introduction To Biblical Interpretation by William W Klein.**
- **Listen, Follow and Apply Every Step of Introduction To Biblical Hermeneutics by Walter C Kaiser Jr.**

Step 2. Follow Each Step of the Book.

Step 3-Analysis of Logic.

Step 4-Analysis of Grammar.

Step 5- Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
   - Critical Discourse Analysis_ The Critical Study of Language.
   - Discourse analysis.
   - The Routledge handbook of discourse analysis.

Step 6- Analysis of Genre.

A. Open Figure Of Speech Folder. Use the Following Books for Analysis of Genre :
   - Literary Device.
   - FIGURES OF SPEECH - Biblical Research Journal.
   - Figures of Speech.

Step 7- Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context

Step 8- Facts within The Context.

Step 9- Do the Fact Checking. Checking Facts, If they are correct or incorrect.

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:
   - Wikipedia
   - E-book
   - Books about autobiography and Biography
   - Websites
   - University
   - Books
   - Audiobooks
   - Handbooks
   - Dictionary
   - Cross References
   - Atlas
   - Commentaries
   - Articles
   - Journals
   - Newspapers
   - Websites
   - Harvard business review

- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time

- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education

- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?

- Are the FACTS are True or Wrong?
- Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking
B. Does the Author provided the list of sources citation?

Step 10-Rhetorical Analysis Of The Text

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:
    - Rhetoric By Aristotle.
    - A Companion to Rhetoric and Rhetorical Criticism.
    - Ancient Rhetoric From Aristotle to Philostratus.
    - Ancient Rhetoric For Contemporary Students by Sharon Crowley.
    - Art Of Rhetoric By Aristotle.
    - Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
    - Encyclopaedia of Rhetoric.
    - On Rhetoric: Theory of Civic Discourse by Aristotle.
    - Politics and Rhetoric: The Persuasive Power of Metaphor.
    - Rhetoric By Jennifer Richards.
    - Rhetoric In Details By John Benjamins.
    - Rhetorical Grammar By Martha Kolln.
    - Sourcebook on Rhetoric By James Jasinski.
    - The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
    - The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
    - The Rhetoric of Reason By James Crosswhite.
    - Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
    - Writing Arguments: a RHETORIC With Reading by John Ramage.
B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

Method 19-Theological Group of Principles.

Step 1. Decide, Which Of the Following Theological Group of Principle or Sub-divided Context Mention Principles:

Theological Group of Principles:

1. The **Historical-grammatical** principle based on historical, socio-political, geographical, cultural and linguistic / grammatical context
2. Alternate, mutually exclusive, models of history:
    A. The **Dispensational model** or The **Chronometrical Principle**: "During different periods of time, God has chosen to deal in a particular way with man in respect to sin and man's responsibility."
    B. The **Covenantal model**: "We differentiate between the various contracts that God has made with his people; specifically their provisions, their parties and their purposes."
    C. The **New-Covenantal** model: The Old Testament Laws have been fulfilled and abrogated or cancelled with Christ's death, and replaced with the Law of Christ of the New Covenant, although many of the Old Covenant laws are reinstituted under the New Covenant.
3. The **Ethnic Division Principle**: "The word of truth is rightly divided in relation to the three classes which it treats, i.e. Jews, Gentiles and the Church."
4. The **Breach Principle**: Interpretation of a certain verse or passage in Scripture is aided by a consideration of certain breaches, either breaches of promise or breaches of time.
5. The **Christo-Centric Principle**: "The mind of deity is eternally centered in Christ. All angelic thought and ministry are centered in Christ. All Satanic hatred and subtlety are centered at Christ. All human hopes are, and human occupations should be, centered in Christ. The whole material universe in creation is centered in Christ. The entire written word is centered in Christ."

6. The **Moral Principle**
7. The **Discriminational Principle**: "We should divide the word of truth so as to make a distinction where God makes a difference."
8. The **Predictive Principle**
9. The **Application Principle**: "An application of truth may be made only after the correct interpretation has been made"
10. The **Principle of Human Willingness in Illumination**
11. The **Context Principle**: "God gives light upon a subject through either near or remote passages bearing upon the same subject."

Sub-divided Context/Mention Principles:

1. The **First Mention Principle**: "God indicates in the first mention of a subject the truth with which that subject stands connected in the mind of God."
2. The **Progressive Mention Principle**: "God makes the revelation of any given truth increasingly clear as the word proceeds to its consummation."
3. The **Comparative Mention Principle**
4. The **Full Mention Principle** or The **Complete Mention Principle**: "God declares his full mind upon any subject vital to our spiritual life."
5. The **Agreement Principle**: "The truthfulness and faithfulness of God become the guarantee that he will not set forth any passage in his word that contradicts any other passage."
6. The **Direct Statement Principle**: "God says what he means and means what he says."
7. The **Gap Principle**: "God, in the Jewish Scriptures, ignores certain periods of time, leaping over them without comment."
8. The **Threefold Principle**: "The word of God sets forth the truths of salvation in a three-fold way: past - justification; present - sanctification/transformation; future - glorification/consummation."
9. The **Repetition Principle**: "God repeats some truth or subject already given, generally with the addition of details not before given."
10. The **Synthetic Principle**
11. The **Principle of Illustrative Mention**
12. The **Double Reference Principle**

Step 2. Decide the List of References of The Bible Text which would be appropriate For Analysis Specific Theological Group of Principle or Sub-divided Context Mention Principles

Step 3-Analysis of Logic.

Step 4-Analysis of Grammar.

Step 5- Analysis of Genre.

Step 6- Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?

Step 7-What Are The Facts Within Context?

Step 8-Implication.

- What are implication of this?

Step 9-What Further Analysis or Research I Need To Do, Next Time?

Step 10-Write out a Personal Application.

1. Application is when you personally apply to your life and ministry the truths you have learned.
2. Example to Follow.
3. Error to Avoid.
4. Duty to Perform.
5. Promise to claim.
6. Relationship to develop.
7. Changes to make.
8. Prayer to pray.
9. Did I see anything of myself in this person's life?
10. Did he show some of my weaknesses?
11. Did he reveal to me some of my strengths?
12. What impressed me most about this person's life?
13. Where do I fall short in this area?
14. What do I intend to do about it?
15. What were the positive character traits? Ask God to help you develop them in your own life.
16. What were the negative character traits? Do you see any of these in your own life? Ask God to help you overcome them.

17. Compose one sentence which summarizes the greatest truth you learned from this life. For example, a statement about the life of Sampson might be "Spiritual compromise results in failure.”

Step 11-Meditate on Verse you have chosen to study

1. Meditate means think and dwell and ponder.
2. Select a bible portion to study, identify its subject and key verse and summarise its teaching, then meditate on passage.
3. Recall passage which is the most important in the portion of the text.

Method 20-How To Read A Book, Compact Literature and Literature of Compoaition

Step 1. Decide, Which Of the Following How To Read A Book By Mortimer Adler Editions I will Use For Analysis Biblical Text.

- **How To Read A Book: The Classical Guide To Intelligent Reading by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: Revised and Updated by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: The Art Of Getting A Liberal Education 1940 Edition by Mortimer Adler**
- **How To Read A Book: The Art Of Getting A Liberal Education 1972 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book:A Guide To Reading The Great Books 1966 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: The Classical Guide To Intelligent Reading 1972 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book1972 Edition by Mortimer Adler and Charles Van Doren.**
- **Compact of Literature.**
- **Literature of Composition.**

Step 2. Listen How to Read A Book of Your Choice, then follow and apply each Steps in Reading the Book or Text You are Analysing.

Step 32-Decide The Rules of Reading For More In-depth Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method. Use These Methods To Do Very DEEP Analysis of the Text or Topic Than Previous Methods.

1. **Decide The Rules of Reading For Deep Work, Shallow Work, Bible Study, Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method.**
    A. **Practical-Mortimer Adler book how to read a book type of process**
        I. **Method 21-How To Read A Book By Mortimer Adler Various Editions.**
        II. **Method 22-How To Read A Book For Various Books.**
            - **First Level of Reading**
            - **Second Level Reading**
            - **Third Level of Reading**
            - **Aids to Reading**
            - **How To Read Practical and Theoretical Books**
            - **How To Read Imaginative Literature**
            - **Reading Stories**
            - **Reading Plays**
            - **Reading Poems and Poetry**
            - **How To Read History**
            - **How To Read Biography**

- **How To Read Autobiography**
- **How To Read About Current Events**
- **How To Read Science and Mathematics**
- **How To Read Philosophy**
- **How To Read Theology**
- **How To Read Social Science**
- **Fourth Level of Reading: Syntopical Reading**

B. For Syntopicon, Research- Advanced

I. Method 23- Syntopicon.

II. Method 24-The Craft of Research

III. Method 25-Research Books can Be Used.

C. For Investigative Journalism- Advanced

I. Method 26-Journalism: New Challenges

D. Mixed Method- Advanced

I. Method 27-Mixed Methods of Rules of Reading

Step 33-How Many Pages Read A Day.

1. **Step 1-How Many Pages Read A Day.**
    I. **Read no more than 2-25 pages a day, and do The Work Required to Have an Opinion on Any Topic and Anything.**
    II. **The ideal is not merely to read or Listen faster, but to read or Listen at different speeds, and to know when the different speeds are appropriate.**

Step 34-Do Not Speed Read.

1. Do Not Speed Read.

I. **Don't fool yourself.** While reading is the key to getting smarter, speed reading is just a fancy way of fooling yourself into thinking you're learning something. In reality Speed reading is just turning pages quickly.

II. **Reading fast is not thinking.** If you're reading fast you're not thinking and challenging what you're reading. You're not being critical. You're not making connections with existing knowledge. You're not arguing with the author. You're not reading something at the edge of your cognitive ability. All of that is work. And if you're not doing the work, you're only walking away with surface knowledge. Reading is mentally demanding.

III. **Reading fast is worse than not reading.** Reading fast gives you two things that should never mix: surface knowledge and overconfidence. And that's a recipe for really bad decisions. Bad decisions reduce the free time we have. After all, we have to run around fixing all of these mistakes.

IV. **Visible costs get attention, invisible ones don't.** Most people choose the path of low upfront visible costs and high visible costs later. If you're willing to incur the cost of reading correctly and appropriately (it takes more time than speed reading), you get a massive benefit later. If you speed-read, you're incurring invisible costs that show up later in your lack of real understanding. Ignorance is more expensive than investing the time necessary to get smarter.

V. **There's a better solution, anyways.** Learning what a good book really looks like, and learning how to skip the bad ones, is a far more robust time saver than speed-reading. Hope your radar for a great book, be a little ruthless about culling and quitting the weak. Don't waste time reading.

VI. **Most people want to create the impression they read**. That they have unique insights. That they know what they're talking about. In the end however, when it comes to doing the work, they walk away. That's why there is so much value in reading. Do the work.

VII. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process Of Reading.**

Step 35-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 36-Isolating Myself For Deep Study, Deep Work AND Decide The Study or Work Philosophy

1. **Listen and Apply Book on Deep Book and Power of Habits.**
    I. 7 Habits of Highly Effective Families.
    II. Atomic Habit by James Clear.
    III. Deep Work by Cal Newport.
    IV. The Power of Habit_ Why We Do What We Do in Life and Business.
    V. The Ultimate Focus Strategy_ How to Set the Right Goals, Develop Powerful Focus, Stick to the Process, and Achieve Success.
    VI. Tools of Titans by Tim ferris.

2. **Create Physical and Mental Space For Isolated Work.**
    I. Collaboration doesn't just happen online or over digital tools. And while most knowledge workers spend their days in open offices designed to create more interaction and collaboration. In reality, they rarely do that. Rather than increase our face-to-face interactions, open offices have been found to decrease them by up to 70%.
    II. If you work at home or remotely, you're not completely safe from this issue either. Yes, you need a physical space devoid of distractions to do focused work. But you also need to create mental space as well. This means getting over the feeling of needing to "catch up" and always be around on Slack and IM.
    III. To stay "bursty" try to only check in at specific times. That way your team knows when you're available and you can schedule your deep work around those periods.
    IV. To be the best collaborator possible, you need to balance between being around and being heads down. And according to the research, there are few better ways to do that then bringing a bit of "burstiness" into your day.

3. Power of Intermittent Isolation For Deep Study and Deep Work.

I. We're actually more productive, efficient, and creative when we follow the lead of the ants and work "intermittently" rather than trying to be "always on." Especially when it comes to complex problem-solving.

II. The isolated time helps to come up with the most creative ideas, and then came together as a group to explain, learn from each other, and narrow in on the highest-quality ones to present, I am working In the group.

III. **We all do better work when we have time for both collaboration and private creative thinking**.

IV. Constant communication—especially over tools like Slack and instant messengers—actually decrease both our productivity and creativity.

V. Researchers looking at the productivity of remote teams found that those who practiced a "bursty" style of communication—rapid periods of collaboration followed by long periods of silence—were the most successful.

VI. "During a rapid-fire burst of communication, team members can get input necessary for their work and develop ideas. Conversely, during longer periods of silence everyone is presumably hard at work acting upon the ideas that were exchanged in the communication burst."

4. Decide and Write Study Philosophy I Will Use For Today.

I. Monastic Philosophy. The monastic philosophy involves cutting out all shallow activities to focus on deep work. This is a rather radical approach that focuses entirely on deep work and nothing else for weeks or months on end.

II. Bimodal Philosophy. The bimodal philosophy involves splitting your schedule based on the amount of work. This would look like an individual spending at least a day or weeks on deep work, and once that is completed, the individual will focus on only shallow work. If you do this approach on a weekly basis, you could try to do all your deep work during weekdays, and your shallow work such as responding to emails, using social media, etc. on the weekends.

III. Rhythmic Philosophy. The rhythmic strategy involves doing deep work as a daily habit. While the time of day you do your deep work each day doesn't matter, it's essential that if you choose this strategy, you stick with it. Time blocking certain hours, about 1 to 4 hours each day, to complete your deep work tasks is key. For example, Time blocking from 12 P.M. to 4 P.M. to do all your deep work tasks.

IV. **Journalistic Philosophy.** Journalistic strategy involves trying to do deep work whenever it fits into your schedule. This is extremely difficult to do. This is because constantly switching from deep to shallow work efficiently is hard and oftentimes only works for those who are more experienced with deep work.

Step 37-The Power of Concentration

I. **Listen and Apply the following book-*The Ultimate Focus Strategy_ How to Set the Right Goals, Develop Powerful Focus, Stick to the Process, and Achieve Success.***

II. **The core of mindfulness is the ability to pay attention. That's exactly what Holmes does when he taps together the tips of his fingers, or exhales a fine cloud of smoke. He is centering his attention on a single element. And somehow, despite the seeming pause in activity, he emerges, time and time again, far ahead of his energetic colleagues.**

III. **That's the thing about mindfulness. It seems to slow you down, but it actually gives you the resources you need to speed up your thinking.**

IV. **All of humanity's problems stem from man's inability to sit quietly in a room alone."**

V. **Step In Concentration**

   A. **Eliminate distractions. How do we focus better if we are always bombarded with information? Make a practice to block time in your schedule to do a specific task or activity. During this time, request that you be left alone or go to a place where others are unlikely to disturb you: a library, a coffee shop, a private room.**

      Close social media and other apps, silence notifications, and keep your phone hidden from sight in a bag or backpack. As described in HBR, researchers found that cognitive capacity was significantly better when the phone was out of sight, not just turned off. Keep Your primary focus is to complete what you need to do. Shutting off both internal and external disturbances can help you to concentrate.

   B. **Reduce multitasking. Attempting to perform multiple activities at the same time makes us *feel* productive. It's also a recipe for lower focus, poor concentration, and lower productivity. And lower productivity can lead to burnout. Examples of multitasking include listening to a podcast while responding to an email or talking to someone over the phone while writing your report. Such multitasking not only hampers your ability to focus but compromises your work quality.**

C. **Practice mindfulness and meditation. Meditating or practicing mindfulness activities can strengthen well-being and mental fitness and improve focus. During the meditation process, our brain becomes calmer and our whole body becomes more relaxed. We focus on our breath during the process so that we will not be distracted by our minds. With practice, we can learn to use our breath to bring our attention back to a particular task so that it can be done well even if we get interrupted. Steps in Mindfulness**

   A. **Step 1: Breathe In Deeply, And Breathe Out Slowly, Letting Yourself Relax.**
   B. **Step 2: Gently Ask Your Mind To Keep Aside All Your Worries And Concerns.**
   C. **Step 3: Bring More Awareness Into Breathing, Feeling It With Your Senses.**
   D. **Step 4: Start Counting Your Breaths Slowly. Bring Your Mind Back If It Wanders.**
   E. **Step 5: Get Immersed In The Present, Losing Consciousness Of Your Surroundings.**
   F. **Step 6: Accept The Thoughts And Emotions Moving Across Your Mind Just As They Are.**

G. **Get more sleep. Many factors affect your sleep. One of the most common is reading from an electronic device like a computer, phone, or tablet or watching your favorite movie or TV show on an LED TV just before bedtime. Research has shown that such devices emit light towards the blue end of the spectrum. Such light will stimulate your eye retina and prevent the secretion of melatonin that promotes sleep anticipation in the brain. Use a filter or "blue light" glasses to minimize such blue light or avoid all electronic devices before bed. Other ways to improve sleep include avoiding exercise late in the day, staying hydrated throughout the day, using journaling or breathing exercises to quiet the mind, and creating a predictable bedtime routine and schedule.**

H. **Choose to focus on the moment. It might feel counterintuitive when you feel unable to concentrate, but remember that you choose where you focus. It's tough to concentrate when your mind is always in the**

past and worrying about the future. While it isn't easy, make an effort to let go of past events. Acknowledge the impact, what you felt, and what you learned from it, then let it go. Similarly, acknowledge your concerns about the future, consider how you are experiencing that anxiety in your body, then choose to let it go. We want to train our mental resources to focus on the details of what matters at the moment. Our minds go in the direction we choose to focus.

I. **Take a short break. This also might seem counterintuitive, but when you focus on something for a long time, your focus may begin to die down. You may feel more and more difficulty devoting your attention to the task. Researchers have found that our brains tend to ignore sources of constant stimulation. Taking very small breaks by refocusing your attention elsewhere can dramatically improve mental concentration after that. The next time you are working on a project, take a break when you begin to feel stuck. Move around, talk to someone, or even switch to a different type of task. You will come back with a more focused mind to keep your performance high.**

J. **Connect with nature. Research has found that even having plants in office spaces can help increase concentration and productivity, as well as workplace satisfaction and better air quality. Finding time to take a walk in the park or appreciating the plants or flowers in your garden can boost your concentration and help you feel refreshed.**

K. **Train your brain. Scientific research is starting to amass evidence on the ability of brain training activities to enhance cognitive abilities, including concentration, in adults. Such brain training games can also help you develop your working and short-term memory, as well as your processing and problem-solving skills. Examples of such games include jigsaw puzzles, sudoku, chess, and brain-stimulating video games.**

L. **Exercise. Start your day with simple exercise and get your body moving. According to the May 2013 issue of the Harvard Men's Health Watch, regular exercise releases chemicals key for memory, concentration, and mental sharpness. Other research found that exercise can boost the brain's dopamine, norepinephrine, and serotonin levels and all these will affect focus and attention.**

Individuals who do some form of exercise or sports perform better on cognitive tasks when compared with those who have poor physical health. Physical movement helps relax the muscles and relieve tension in the body. Since the body and mind are so closely linked, when your body feels better so, too, will your mind.

M. Listen to music. Music has been shown to have therapeutic effects on our brains. Light music may help you to concentrate better, but some music may distract you. Experts generally agree that classical music and nature sounds, such as water flowing, are good choices for concentration while music with lyrics and human voices may be distracting. Multiple apps and services offer background music and soundscapes designed for different types of focus and work needs.

N. Eat well. Choose foods that moderate blood sugar, maintain energy, and fuel the brain. Fruits, vegetables, and high-fiber foods can keep your blood sugar levels even. Reduce sugary foods and drinks that cause spikes and dips in your sugar levels make you feel dizzy or drowsy.

   Your brain needs lots of good fat to function properly. Nuts, berries, avocados, and coconut oil are all great ways to get healthy fats into your diet and help your brain run more smoothly. The science on Research has found that foods like blueberries can boost concentration and memory for up to 5 hours after consumption due to an enzyme that stimulates the flow of oxygen and blood to the brain, helping with memory as well as our ability to focus and learn new information. Leafy green vegetables such as spinach contain potassium which accelerates the connections between neurons and can make our brain more responsive.

O. Set a daily priority. Write down what you want to accomplish each day, ideally the night before, and identify a single priority that you commit to accomplishing. This will help focus your brain on what matters, tackling the big jobs first and leaving the small stuff till later. Break large tasks into smaller bytes so that you will not be overwhelmed. Identifying true priorities can help relieve distracting anxiety, and achieving small daily goals can wire your brain to achieve success.

P. **Create space for work. Create a calm, dedicated space for work, if possible. Not everyone can have a well-appointed office, but desk organizers, noise-canceling headphones, an adjustable monitor, and adjustable lighting can help. Clear clutter out of sight, make it as ergonomic and comfortable as possible, and try to keep your space neat and ventilated.**

Q. **Use a timer. Train your brain to hyper-focus on a task by using a timer or phone alarm. First, decide what task you want to complete. Set your timer for 20 minutes (generally not more than 30 minutes) and concentrate on the task. When the alarm rings take a short break for 5 minutes. You can either take a walk and do some stretching exercise, then reset the timer and start again. This technique has shown to be effective to improve your concentration.**

R. **Switch tasks. While we may want to concentrate on a particular task, sometimes we get stuck and our brain needs something fresh to focus on. Try switching to other tasks or something you love to do. Switching tasks can help you stay alert and productive for a longer period.**

Step 38-You Are Required To Do The Work to Have an Opinion on Any Topic

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.
6. Do not read the newest books, but the great books of western world, stoic and classics, as these books stood the test of time.
7. Do Not Have the Opinion and do not make any judgement about Anything, I see and hear, If I did not work Hard to have an opinion. I need to Read, Analyse, Research the topic from every angle, so that I can have an opinion or Make Judgement on the topic.

8. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

9. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading, Deductive and Inductive Methodology.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

10. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

11. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

12. When Dialogue, Discussion, Debate Takes A Place.

A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.

- Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
- Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
- Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment. **Step 40**- Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method And Follow Each Steps Of The Method Until Finish All Steps,

Step 39-Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method And Follow Each Steps As many Times As I Want, While Re-listen Lectures, Read Books or Lecture Notes 1-1000 Times For Each Step. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process. Deep Work, Shallow Work, Bible

VERY SLOW READING-COMPLEX TEXT-Study, Analysis of Text and Syntopicon -Advanced Level

Method 21-How To Read A Book

Step 1. Decide, Which Of the Following How To Read A Book By Mortimer Adler Editions I will Use For Analysis Biblical Text.

- **How To Read A Book: The Classical Guide To Intelligent Reading by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: Revised and Updated by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: The Art Of Getting A Liberal Education 1940 Edition by Mortimer Adler**
- **How To Read A Book: The Art Of Getting A Liberal Education 1972 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book:A Guide To Reading The Great Books 1966 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book: The Classical Guide To Intelligent Reading 1972 Edition by Mortimer Adler and Charles Van Doren.**
- **How To Read A Book 1972 Edition by Mortimer Adler and Charles Van Doren.**
- **Compact Literature**
- **Composition of Literature**

Step 2. Listen How to Read A Book of Your Choice, then follow and apply each Steps in Reading the Book or Text You are Analysing.

Method 22-How To Read A Book By Mortimer Adler For Various Books

The First Level of Reading: Elementary Reading

Ours is a time of great interest in and concern about reading. Public officials have declared that the 1970s will be “the decade of reading.” Best-selling books tell us why Johnny can or can’t read. Research and experimentation in all fields of initial reading instruction proceed at an ever-increasing pace.

Three historical trends or movements have converged upon our time to produce this ferment. The first is the continuing effort of the United States to educate all of its citizens, which means, of course, at a minimum, to make them all literate. This effort, which Americans have supported almost from the beginning of the national existence and which is one of the cornerstones of our democratic way of life, has had remarkable results. Near-universal literacy was obtained in the United States earlier than anywhere else, and this in turn has helped us to become the highly developed industrial society that we are at the present day. But there have been enormous problems, too. They can be summed up in the observation that teaching a small percentage of highly motivated children, most of them the children of literate parents, to read—as was the case a century ago—is a far cry from teaching every child to read, no matter how little motivated he may be, or how deprived his background.

The second historical trend is in the teaching of reading itself. As late as 1870, reading instruction was little changed from what it had been in Greek and Roman schools. In America, at least, the so-called ABC method was dominant throughout most of the nineteenth century. Children were taught to sound out the letters of the alphabet individually—hence the name of this method—and to combine them in syllables, first two letters at a time and then three and four, whether the syllables so constructed were meaningful or not. Thus, syllables such as *ab, ac, ad, ib, ic* were practiced for the sake of mastery of the language. When a child could name all of a determined number of combinations, he was said to know his ABC’s.

This synthetic method of teaching reading came under heavy criticism around the middle of the last century, and two alternatives to it were proposed. One was a variant on the synthetic ABC method, known as the phonic method. Here the word was recognized by its sounds rather than by its letter-names. Complicated and ingenious systems of printing were evolved for the purpose of representing the different sounds made by a single letter, especially the vowels. If you are fifty or over, it is probable that you learned to read using some variant of the phonic method.

A wholly different approach, analytical rather than synthetic, originated in Germany and was advocated by Horace Mann and other educators after about 1840. This involved teaching the *visual* recognition of whole words before giving any attention to letter-names or letter-sounds. This so-called sight method was later extended so that whole sentences, representing units of thought, were introduced first, with the pupils only later learning to recognize the constituent words and then, finally, the constituent letters. This method was especially popular during the 1920s and 30s, which period was also characterized by the shift in emphasis from oral reading to silent reading. It was found that ability to read orally did not necessarily mean ability to read silently and that instruction in oral reading was not always adequate if silent reading was the goal. Thus, an almost exclusive emphasis on rapid, comprehensive silent reading was a feature of the years from about 1920 to 1925. More recently, however, the pendulum has swung back again toward phonics, which indeed had never entirely left the curriculum.

All of these different methods of teaching elementary reading were successful for some pupils, unsuccessful for others. In the last two or three decades, it has perhaps been the failures that have attracted the most attention. And here the third historical trend comes into play. It is traditional in America to criticize the schools; for more than a century, parents, self-styled experts, and educators themselves have attacked and indicted the educational system. No aspect of schooling has been more severely criticized than reading instruction. The current books have a long ancestry, and every innovation carries in its train a posse of suspicious and, one feels, unpersuadable observers.

The critics may or may not be right, but in any event the problems have taken on a new urgency as the continuing effort to educate all citizens has entered a new phase, resulting in ever-growing high school and college populations. A young man or woman who cannot read very well is hindered in his pursuit of the American dream, but that remains largely a personal matter if he is not in school. If he remains in school or goes to college, however, it is a matter of concern for his teachers as well, and for his fellow students.

Hence, researchers are very active at the present time, and their work has resulted in numerous new approaches to reading instruction. Among the more important new programs are the so-called eclectic approach, the individualized reading approach, the language-experience approach, the various approaches based on linguistic principles, and others based more or less closely on some kind of programmed instruction. In addition, new mediums such as the Initial Teaching Alphabet (i.t.a.) have been employed, and sometimes these involve new methods as well. Still other devices and programs are the “total immersion method,” the “foreign-language-school method,” and the method known variously as the “see-say,” “look-say,” “look-and-say,” or “word method.” Doubtless experiments are now being undertaken in methods and approaches that differ from all of these. It is perhaps too early to tell whether any of these is the long-sought panacea for all reading ills.

Stages of Learning to Read

One useful finding of recent research is the analysis of stages in learning to read. It is now widely accepted that there are at least four more or less clearly distinguishable stages in the child's progress toward what is called mature reading ability. The first stage is known by the term "reading readiness." This begins, it has been pointed out, at birth, and continues normally until the age of about six or seven.

Reading readiness includes several different kinds of preparation for learning to read. Physical readiness involves good vision and hearing. Intellectual readiness involves a minimum level of visual perception such that the child can take in and remember an entire word and the letters that combine to form it. Language readiness involves the ability to speak clearly and to use several sentences in correct order. Personal readiness involves the ability to work with other children, to sustain attention, to follow directions, and the like.

General reading readiness is assessed by tests and is also estimated by teachers who are often skilful at discerning just when a pupil is ready to learn to read. The important thing to remember is that jumping the gun is usually self-defeating. The child who is not yet ready to read is frustrated if attempts are made to teach him, and he may carry over his dislike for the experience into his later school career and even into adult life. Delaying the beginning of reading instruction beyond the reading readiness stage is not nearly so serious, despite the feelings of parents who may fear that their child is "backward" or is not "keeping up" with his peers.

In the second stage, children learn to read very simple materials. They usually begin, at least in the United States, by learning a few sight words, and typically manage to master perhaps three hundred to four hundred words by the end of the first year. Basic skills are introduced at this time, such as the use of context or meaning clues and the beginning sounds of words. By the end of this period pupils are expected to be reading simple books independently and with enthusiasm.

It is incidentally worth observing that something quite mysterious, almost magical, occurs during this stage. At one moment in the course of his development the child, when faced with a series of symbols on a page, finds them quite meaningless. Not much later—perhaps only two or three weeks later—he has discovered meaning in them; he knows that they say "The cat sat on the hat." How this happens no one really knows, despite the efforts of philosophers and psychologists over two and a half millennia to study the phenomenon. Where does meaning come from? How is it that a French child would find the same meaning in the symbols "*Le chat s'asseyait sur le chapeau*"? Indeed, this discovery of meaning in symbols may be the most astounding intellectual feat that any human being ever performs—and most humans perform it before they are seven years old!

The third stage is characterised by rapid progress in vocabulary building and by increasing skill in "unlocking" the meaning of unfamiliar words through context clues. In addition, children at this stage learn to read for different purposes and in different areas of

content, such as science, social studies, language arts, and the like. They learn that reading, besides being something one does at school, is also something one can do on one's own, for fun, to satisfy curiosity, or even to "expand one's horizons."

Finally, the fourth stage is characterized by the refinement and enhancement of the skills previously acquired. Above all, the student begins to be able to assimilate his reading experiences—that is, to carry over concepts from one piece of writing to another, and to compare the views of different writers on the same subject. This, the mature stage of reading, should be reached by young persons in their early teens. Ideally, they should continue to build on it for the rest of their lives.

That they often do not even reach it is apparent to many parents and to most educators. The reasons for the failure are many, ranging all the way from various kinds of deprivations in the home environment—economic, social, and/or intellectual (including parental illiteracy)—to personal problems of all kinds (including total revolt against "the system"). But one cause of the failure is not often noted. The very emphasis on reading readiness and on the methods employed to teach children the rudiments of reading has meant that the other, the higher, levels of reading have tended to be slighted. This is quite understandable, considering the urgency and extent of the problems found on this first level. Nevertheless, effective remedies for the overall reading deficiencies of Americans cannot be found unless efforts are made on *all* levels of reading.

Stages and Levels

We have described four levels of reading, and we have also outlined four stages of learning to read in an elementary fashion. What is the relation between these stages and levels?

It is of paramount importance to recognise that the four stages outlined here are all stages of the first level of reading, as outlined in the previous chapter. They are stages, that is, of elementary reading, which thus can be usefully divided somewhat in the manner of the elementary school curriculum. The first stage of elementary reading—reading readiness—corresponds to pre-school and kindergarten experiences. The second stage—word mastery—corresponds to the first grade experience of the typical child (although many quite normal children are not "typical" in this sense), with the result that the child attains what we can call second-stage reading skills, or first grade ability in reading or first grade literacy. The third stage of elementary reading—vocabulary growth and the utilisation of context—is typically (but not universally, even for normal children) acquired at about the end of the fourth grade of elementary school, and results in what is variously called fourth grade, or functional, literacy—the ability, according to one common definition, to read traffic signs or picture captions fairly easily, to fill out the simpler government forms, and the like. The fourth and final stage of elementary reading is attained at about the time the pupil leaves or graduates from elementary school or junior high school. It is sometimes called eighth grade, ninth grade, or tenth grade literacy. The child is a "mature" reader in the sense that he is now capable of reading almost anything, but still in a relatively

unsophisticated manner. In the simplest terms, he is mature enough to do high school work.

However, he is not yet a “mature” reader in the sense in which we want to employ the term in this book. He has mastered the first level of reading, that is all he can read on his own and is prepared to learn more about reading. *But he does not yet know how to read beyond the elementary level.*

We mention all this because it is highly germane to the message of this book. We assume—we must assume—that you, our reader, have attained ninth grade literacy, that you have mastered the elementary level of reading, which means that you have passed successfully through the four stages described. If you think about it, you realize that we could not assume less. No one can learn from a how-to-do-it book until he can read it; and it is particularly true of a book purporting to teach one to read that its readers must be able to read in some sense of the term.

The difference between aided and unaided discovery comes into play here. Typically, the four stages of elementary reading are attained with the help of living teachers. Children differ in their abilities, of course; some need more help than others. But a teacher is usually present to answer questions and smooth over difficulties that arise during the elementary school years. Only when he has mastered all of the four stages of elementary reading is the child prepared to move on to the higher levels of reading. Only then can he read independently and learn on his own. Only then can he begin to become a really good reader.

Higher Levels of Reading and Higher Education

Traditionally, the high schools of America have provided little reading instruction for their students, and the colleges have provided none. That situation has changed in recent years. Two generations ago, when high school enrollments increased greatly within a relatively short period, educators began to realize that it could no longer be assumed that entering students could read effectively. Remedial reading instruction was therefore provided, sometimes for as many as 75% or more students. Within the last decade, the same situation has occurred at the college level. Thus, of approximately 40,000 freshmen entering the City University of New York in the fall of 1971, upwards of half, or more than 20,000 young people, had to be given some kind of remedial training in reading.

That does not mean, however, that *reading instruction beyond the elementary level* is offered in many U.S. colleges to this day. In fact, it is offered in almost none of them. Remedial reading instruction is not instruction in the higher levels of reading. It serves only to bring students up to a level of maturity in reading that they should have attained by the time they graduated from elementary school. To this day, most institutions of higher learning either do not know how to instruct students in reading beyond the elementary level, or lack the facilities and personnel to do so.

We say this despite the fact that a number of four-year and community colleges have recently instituted courses in speed reading, or in “effective” reading, or “competence” in reading. On the whole (though there are exceptions), these courses are remedial. They are designed to overcome various kinds of failures of the lower schools. They are not designed to take the student beyond the first level or to introduce him to the kinds and levels of reading that are the main subject of this book.

This, of course, should not be the case. A good liberal arts high school, if it does nothing else, ought to produce graduates who are competent analytical readers. A good college, if it does nothing else, ought to produce competent syntopical readers. A college degree ought to represent general competence in reading such that a graduate could read any kind of material for general readers and be able to undertake independent research on almost any subject (for that is what syntopical reading, among other things, enables you to do). Often, however, three or four years of graduate study are required before students attain this level of reading ability, and they do not always attain it even then.

One should not have to spend four years in graduate school in order to learn how to read. Four years of graduate school, in addition to twelve years of preparatory education and four years of college—that adds up to twenty full years of schooling. It should not take that long to learn to read. Something is very wrong if it does.

What is wrong can be corrected. Courses could be instituted in many high schools and colleges that are based on the program described in this book. There is nothing arcane or even really new about what we have to propose. It is largely common sense.

Reading and the Democratic Ideal of Education

We do not want to seem to be mere carping critics. We know that the thunder of thousands of freshmen feet upon the stairs makes it hard to hear, no matter how reasonable the message. And as long as a large proportion, even a majority, of these new students cannot read effectively at the elementary level, we are aware that the first task to be faced must be to teach them to read in the lowest, the largest common-denominator, sense of the term.

Nor, for the moment, would we want it any other way. We are on record as holding that unlimited educational opportunity—or, speaking practically, educational opportunity that is limited only by individual desire, ability, and need— is the most valuable service that society can provide for its members. That we do not yet know how to provide that kind of opportunity is no reason to give up the attempt.

But we must also realize—students, teachers, and laymen alike—that even when we have accomplished the task that lies before us, we will not have accomplished the whole task. We must be more than a nation of functional literates. We must become a nation of truly competent readers, recognizing all that the word *competent* implies. Nothing less will satisfy the needs of the world that is coming.

The Second Level of Reading: Inspectional Reading

Inspectional reading is a true level of reading. It is quite distinct from the level that precedes it (elementary reading) and from the one that follows it in natural sequence (analytical reading). But, as we noted in Chapter 2, the levels of reading are cumulative. Thus, elementary reading is contained in inspectional reading, as, indeed, inspectional reading is contained in analytical reading, and analytical reading in syntopical reading.

Practically, this means that you cannot read on the inspectional level unless you can read effectively on the elementary level. You must be able to read an author's text more or less steadily, without having to stop to look up the meaning of many words, and without stumbling over the grammar and syntax. You must be able to make sense of a majority of the sentences and paragraphs, although not necessarily the best sense of all of them.

What, then, is involved in inspectional reading? How do you go about doing it? The first thing to realize is that there are two types of inspectional reading. They are aspects of a single skill, but the beginning reader is well-advised to consider them as two different steps or activities. The experienced reader learns to perform both steps simultaneously, but for the moment we will treat them as if they were quite distinct.

Inspectional Reading I: Systematic Skimming or Pre-reading

Let us return to the basic situation to which we have referred before. There is a book or other reading matter, and here is your mind. What is the first thing that you do?

Let us assume two further elements in the situation, elements that are quite common. First, you do not know whether you want to read the book. You do not know whether it deserves an analytical reading. But you suspect that it does, or at least that it contains both information and insights that would be valuable to you if you could dig them out.

Second, let us assume—and this is very often the case—that you have only a limited time in which to find all this out.

In this case, what you must do is *skim* the book, or, as some prefer to say, pre-read it. Skimming or pre-reading is the first sublevel of inspectional reading. Your main aim is to discover whether the book requires a more careful reading. Secondly, skimming can tell you lots of other things about the book, even if you decide not to read it again with more care.

Giving a book this kind of quick once-over is a threshing process that helps you to separate the chaff from the real kernels of nourishment. You may discover that what you get from skimming is all the book is worth to you for the time being. It may never be worth more. But you will know at least what the author's main contention is, as well as what kind of book he has written, so the time you have spent looking through the book will not have been wasted.

The habit of skimming should not take much time to acquire. Here are some suggestions about how to do it..

1. **LOOK AT THE TITLE PAGE AND, IF THE BOOK HAS ONE, AT ITS PREFACE.**

   Read each quickly. Note especially the subtitles or other indications of the scope or aim of the book or of the author's special angle on his subject. Before completing this step you should have a good idea of the subject, and, if you wish, you may pause for a moment to place the book in the appropriate category in your mind. What pigeonhole that already contains other books does this one belong in?

2. **STUDY THE TABLE OF CONTENTS to obtain a general sense of the book's structure; use it as you would a road map before taking a trip. It is astonishing how many people never even glance at a book's table of contents unless they wish to look something up in it. In fact, many authors spend a considerable amount of time in creating the table of contents, and it is sad to think their efforts are often wasted. It used to be a common practice, especially in expository works, but sometimes even in novels and poems, to write very full tables of contents, with the chapters or parts broken down into many subtitles indicative of the topics covered. Milton, for example, wrote more or less lengthy headings, or "Arguments," as he called them, for each book of *Paradise Lost.* Gibbon published his *Decline and Fall of the Roman Empire* with an extensive analytical table of contents for each chapter. Such summaries are no longer common, although occasionally you do still come across an analytical table of contents. One reason for the decline of the practice may be that people are not so likely to read tables of contents as they once were. Also, publishers have come to feel that a less revealing table of contents is more seductive than a completely frank and open one. Readers, they feel, will be attracted to a book with more or less mysterious chapter titles—they will want to read the book to find out what the chapters are about. Even so, a table of contents can be valuable, and you should read it carefully before going on to the rest of the book. At this point, you might turn back to the table of contents of this book, if you have not already read it. We tried to make it as full and informative as we could. Examining it should give you a good idea of what we are trying to do.**

3. **CHECK THE INDEX if the book has one—most expository works do. Make a quick estimate of the range of topics covered and of the kinds of books and authors referred to. When you see terms listed that seem crucial, look up at least some of the passages cited. (We will have much more to say about crucial terms in Part Two. Here you must make your judgment of their importance on the basis of your general sense of the book, as obtained from steps 1 and 2.) The passages you read may contain the crux—the point on which the book hinges —or the new departure which is the key to the author's approach and attitude. As in the case of the table of contents, you might at**

this point check the index of *this* book. You will recognize as crucial some terms that have already been discussed. Can you identify, for example, by the number of references under them, any others that also seem important?

4. **If the book is a new one with a dust jacket, READ THE PUBLISHER'S BLURB. Some people have the impression that the blurb is never anything but sheer puffery. But this is quite often not true, especially in the case of expository works. The blurbs of many of these books are written by the authors themselves, admittedly with the help of the publisher's public relations department. It is not uncommon for authors to try to summarize as accurately as they can the main points in their book. These efforts should not go unnoticed. Of course, if the blurb is nothing but a puff for the book, you will ordinarily be able to discover this at a glance. But that in itself can tell you something about the work. Perhaps the book does not say anything of importance—and that is why the blurb does not say anything, either. Upon completing these first four steps you may already have enough information about the book to know that you want to read it more carefully, or that you do not want or need to read it at all. In either case, you may put it aside for the moment. If you do not do so, you are now ready to skim the book, properly speaking.**

5. **From your general and still rather vague knowledge of the book's contents, LOOK NOW AT THE CHAPTERS THAT SEEM TO BE PIVOTAL TO ITS ARGUMENT. If these chapters have summary statements in their opening or closing pages, as they often do, read these statements carefully.**

6. **Finally, TURN THE PAGES, DIPPING IN HERE AND THERE, READING A PARAGRAPH OR TWO, SOMETIMES SEVERAL PAGES IN SEQUENCE, NEVER MORE THAN THAT. Thumb through the book in this way, always looking for signs of the main contention, listening for the basic pulse beat of the matter. Above all, do not fail to read the last two or three pages, or, if these are an epilogue, the last few pages of the main part of the book. Few authors are able to resist the temptation to sum up what they think is new and important about their work in these pages. You do not want to miss this, even though, as sometimes happens, the author himself may be wrong in his judgment**
7. **Condemnation before investigation. Set Aside Whatever you been taught and believe about topic and look with fresh eyes and try to hear what text is saying.**

You have now skimmed the book systematically; you have given it the first type of inspectional reading. You should know a good deal about the book at this point, after having spent no more than a few minutes, at most an hour, with it. In particular, you should know whether the book contains matter that you still want to dig out, or whether it deserves no more of your time and attention. You should also be able to place the book even more accurately than before in your mental card catalogue, for further reference if the occasion should ever arise.

Incidentally, this is a very active sort of reading. It is impossible to give any book an inspectional reading without being alert, without having all of one's faculties awake and working. How many times have you daydreamed through several pages of a good book only to wake up to the realization that you have no idea of the ground you have gone over? That cannot happen if you follow the steps outlined here—that is, if you have a system for following a general thread.

Think of yourself as a detective looking for clues to a book's general theme or idea, alert for anything that will make it clearer. Heeding the suggestions we have made will help you sustain this attitude. You will be surprised to find out how much time you will save, pleased to see how much more you will grasp, and relieved to discover how much easier it all can be than you supposed.

Inspectional Reading II: Superficial Reading

The title of this section is intentionally provocative. The word "superficial" ordinarily has a negative connotation. We are quite serious, however, in using the term.

Everyone has had the experience of struggling fruitlessly with a difficult book that was begun with high hopes of enlightenment. It is natural enough to conclude that it was a mistake to try to read it in the first place. But that was not the mistake. Rather it was in expecting too much from the first going over of a difficult book. Approached in the right way, no book intended for the general reader, no matter how difficult, need be a cause for despair.

What is the right approach? The answer lies in an important and helpful rule of reading that is generally overlooked. That rule is simply this: *In tackling a difficult book for the first time, read it through without ever stopping to look up or ponder the things you do not understand right away.*

Pay attention to what you can understand and do not be stopped by what you cannot immediately grasp. Go right on reading past the point where you have difficulties in understanding, and you will soon come to things you do understand. Concentrate on these. Keep on in this way. Read the book through, undeterred and undismayed by the paragraphs, footnotes, comments, and references that escape you. If you let yourself get stalled, if you allow yourself to be tripped up by any one of these stumbling blocks, you are lost. In most cases, you will not be able to puzzle the thing out by sticking to it. You will have a much better chance of understanding it on a second reading, but that requires you to have read the book *through* at least once.

What you understand by reading the book through to the end—even if it is only fifty percent or less—will help you when you make the additional effort later to go back to the places you passed by on your first reading. And even if you never go back, understanding half of a really tough book is much better than not understanding it at all, which will be the case if you allow yourself to be stopped by the first difficult passage you come to.

Most of us were taught to pay attention to the things we did not understand. We were told to go to a dictionary when we met an unfamiliar word. We were told to go to an encyclopedia or some other reference work when we were confronted with allusions or statements we did not comprehend. We were told to consult footnotes, scholarly commentaries, or other secondary sources to get help. But when these things are done *prematurely,* they only impede our reading, instead of helping it.

The tremendous pleasure that can come from reading Shakespeare, for instance, was spoiled for generations of high school students who were forced to go through *Julius Caesar, As You Like It,* or *Hamlet,* scene by scene, looking up all the strange words in a glossary and studying all the scholarly footnotes. As a result, they never really read a Shakespearean play. By the time they reached the end, they had forgotten the beginning and lost sight of the whole. Instead of being forced to take this pedantic approach, they should have been encouraged to read the play at one sitting and discuss what they got out of that first quick reading. Only then would they have been ready to study the play carefully and closely because then they would have understood enough of it to learn more.

The rule applies with equal force to expository works. Here, indeed, the best proof of the soundness of the rule—give a book a first superficial reading—is what happens when you do *not* follow it. Take a basic work in economics, for example, such as Adam Smith's classic *The Wealth of Nations.* (We choose this book as an example because it is more than a textbook or a work for specialists in the field. It is a book for the *general* reader.) If you insist on understanding everything on every page before you go on to the next, you will not get very far. In your effort to master the fine points, you will miss the big points that Smith makes so clearly about the factors of wages, rents, profits, and interest that enter into the cost of things, the role of the market in determining prices, the evils of monopoly, the reasons for free trade. You will miss the forest for the trees. You will not be reading well on *any* level.

On Reading Speeds

We described inspectional reading in Chapter 2 as the art of getting the most out of a book in a limited time. In describing it further in the present chapter, we have in no way changed that definition. The two steps involved in inspectional reading are both taken rapidly. The competent inspectional reader will accomplish them both quickly, no matter how long or difficult the book he is trying to read.

That working definition, however, inevitably raises the question, What about speed reading? What is the relation between the levels of reading and the many speed reading courses, both academic and commercial, that are offered at the present day?

We have already suggested that such courses are basically remedial—that is, that they provide instruction mainly, if not exclusively, in reading on the elementary level. But more needs to be said.

Let it be understood at once that we are wholly in favour of the proposition that most people ought to be *able* to read faster than they do. Too often, there are things we *have* to read that are not really worth spending a lot of time reading; if we cannot read them quickly, it will be a terrible waste of time. It is true enough that many people read some things too slowly, and that they ought to read them faster. But many people also read some things too fast, and they ought to read those things more slowly. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.

Our point is really very simple. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem. But this is only one reading problem. The obstacles that stand in the way of comprehension of a difficult book are not ordinarily, and perhaps never primarily, physiological or psychological. They arise because the reader simply does not know what to do when approaching a difficult—and rewarding—book. He does not know the rules of reading; he does not know how to marshal his intellectual resources for the task. No matter how quickly he reads, he will be no better off if, as is too often true, he does not know what he is looking for and does not know when he has found it.

With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at *different speeds*—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Fixations and Regressions

Speed reading courses properly make much of the discovery—we have known it for half a century or more—that most people continue to sub-vocalise for years after they are first taught to read. Films of eye movements, furthermore, show that the eyes of young or untrained readers “fixate” as many as five or six times in the course of each line that is read. (The eye is blind while it moves; it can only see when it stops.) Thus single words or at the most two-word or three-word phrases are being read at a time, in jumps across the line. Even worse than that, the eyes of incompetent readers regress as often as once every two or three lines—that is, they return to phrases or sentences previously read.

All of these habits are wasteful and obviously cut down reading speed. They are wasteful because the mind, unlike the eye, does not need to “read” only a word or short phrase at a time. The mind, that astounding instrument, can grasp a sentence or even a paragraph at a “glance”—if only the eyes will provide it with the information it needs. Thus the primary task—recognised as such by all speed reading courses—is to correct the fixations and regressions that slow so many readers down. Fortunately, this can be done quite easily. Once it is done, the student can read as fast as his mind will let him, not as slow as his eyes make him.

There are various devices for breaking the eye fixations, some of them complicated and expensive. Usually, however, it is not necessary to employ any device more sophisticated than your own hand, which you can train yourself to follow as it moves more and more quickly across and down the page. You can do this yourself. Place your thumb and first two fingers together. Sweep this “pointer” across a line of type, a little faster than it is comfortable for your eyes to move. Force yourself to keep up with your hand. You will very soon be able to read the words as you follow your hand. Keep practicing this, and keep increasing the speed at which your hand moves, and before you know it you will have doubled or trebled your reading speed.

The Problem of Comprehension

But what exactly have you gained if you increase your reading speed significantly? It is true that you have saved time—but what about comprehension? Has that also increased, or has it suffered in the process?

There is no speed reading course that we know of that does not claim to be able to increase your comprehension along with your reading speed. And on the whole, there is probably some foundation for these claims. The hand (or some other device) used as a timer tends not only to increase your reading rate, but also to improve your concentration on what you are reading. As long as you are following your hand it is harder to fall asleep, to daydream, to let your mind wander. So far, so good. Concentration is another name for what we have called activity in reading. The good reader reads actively, with concentration.

But concentration alone does not really have much of an effect on comprehension, when that is properly understood. Comprehension involves much more than merely being able to answer simple questions of fact about a text. This limited kind of comprehension, in fact, is nothing but the elementary ability to answer the question about a book or other reading material: “What does it say?” The many further questions that, when correctly answered, imply higher levels of comprehension are seldom asked in speed reading courses, and instruction in how to answer them is seldom given.

To make this clearer, let us take an example of something to read. Let us take the Declaration of Independence. You probably have a copy of it available. Take it down and look at it. It occupies less than three pages when printed. How fast should you read it?

The second paragraph of the Declaration ends with the sentence: “To prove this, let facts be submitted to a candid world.” The following two pages of “facts,” some of which, incidentally, are quite dubious, can be read quickly. It is not necessary to gain more than a general idea of the *kind* of facts that Jefferson is citing, unless, of course, you are a scholar concerned with the historical circumstances in which he wrote. Even the last paragraph, ending with the justly celebrated statement that the signers “mutually pledge to each other our lives, our fortunes, and our sacred honour,” can be read quickly. This is a rhetorical flourish, and it deserves what mere rhetoric always deserves. But the first two paragraphs of the Declaration of Independence require more than a first rapid reading.

We doubt that there is anyone who can read those first two paragraphs at a rate much faster than 20 words a minute. Indeed, individual words in the famous second paragraph—words like “inalienable,” “rights,” “liberty,” “happiness,” “consent,” “just powers”—are worth dwelling over, puzzling about, considering at length. Properly read, for full comprehension, those first two paragraphs of the Declaration might require days, or weeks, or even years.

The problem of speed reading, then, is the problem of comprehension. Practically, this comes down to defining comprehension at levels beyond the elementary. Speed reading courses, for the most part, do not attempt this. It is worth emphasizing, therefore, that it is precisely comprehension in reading that this book seeks to improve. You cannot comprehend a book without reading it analytically; analytical reading, as we have noted, is undertaken primarily for the sake of comprehension (or understanding).

Summary of Inspectional Reading

A few words in summary of this chapter. There is no single right speed at which you should read; the ability to read at various speeds and to know when each speed is appropriate is the ideal. Great speed in reading is a dubious achievement; it is of value only if what you have to read is not really worth reading. A better formula is this: *Every book should be read no more slowly than it deserves, and no more quickly than you can read it with satisfaction and comprehension.* In any event, the speed at which they read, be it fast or slow, is but a fractional part of most people’s problem with reading.

Skimming or pre-reading a book is always a good idea; it is necessary when you do not know, as is often the case, whether the book you have in hand is worth reading carefully. You will find that out by skimming it. It is generally desirable to skim even a book that you intend to read carefully, to get some idea of its form and structure.

Finally, do not try to understand every word or page of a difficult book the first time through. This is the most important rule of all; it is the essence of inspectional reading. Do not be afraid to be, or to seem to be, superficial. Race through even the hardest book. You will then be prepared to read it well the second time.

We have now completed our initial discussion of the second level of reading—inspectional reading. We will return to the subject when we come to Part Four, where we

will show what an important role inspectional reading plays in syntopical reading, the fourth and highest level of reading.

However, you should keep in mind during our discussion of the third level of reading—analytical reading—which is described in the second part of this book, that inspectional reading serves an important function at that level, too. The two stages of inspectional reading can both be thought of as anticipations of steps that the reader takes when he reads analytically. The first stage of inspectional reading— the stage we have called systematic skimming—serves to prepare the analytical reader to answer the questions that must be asked during the first stage of that level. Systematic skimming, in other words, anticipates the comprehension of a book's structure. And the second stage of inspectional reading—the stage we have called

superficial reading—serves the reader when he comes to the second stage of reading at the analytical level. Superficial reading is the first necessary step in the interpretation of a book's contents.

Before going on to explain analytical reading, we want to pause for a moment to consider again the nature of reading as an activity. There are certain actions the active or demanding reader must perform in order to read well. We will discuss them in the next chapter.

Inspectional Reading I: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed
4. Read or Listen The Full Book Without Stopping
5. Read or listen 25min and 5min break
    - Read or Listen 20 pages an Hour according Mortimer Adler
6. Read or Listen between 1-50 times the book
7. Speed of Audiobook.
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed.
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Inspectional Reading II: Superficial Reading

1. Read or Listen The Full Book Without Stopping.
2. That rule is simply this: In tackling a difficult book for the first time, read it through without ever stopping to look up or ponder the things you do not understand right away.
3. Pay attention to what you can understand and do not be stopped by what you cannot immediately grasp. Go right on reading past the point where you have difficulties in understanding, and you will soon come to things you do understand. Concentrate on these.

The rules for reading yourself to sleep are easier to follow than are the rules for staying awake while reading. Get into bed in a comfortable position, make sure the light is inadequate enough to cause a slight eyestrain, choose a book that is either terribly difficult or terribly boring—in any event, one that you do not really care whether you read or not—and you will be asleep in a few minutes. Those who are experts in relaxing with a book do not have to wait for nightfall. A comfortable chair in the library will do any time.

Unfortunately, the rules for keeping awake do not consist in doing just the opposite. It is *possible* to keep awake while reading in a comfortable chair or even in bed, and people have been known to strain their eyes by reading late in light too dim. What kept the famous candlelight readers awake? One thing certainly—it made a difference to them, a great difference, whether or not they read the book they had in hand.

Whether you manage to keep awake or not depends in large part on your goal in reading. If your aim in reading is to profit from it—to grow somehow in mind or spirit—you have to keep awake. That means reading as actively as possible. It means making an effort—an effort for which you expect to be repaid.

Good books, fiction or nonfiction, deserve such reading. To use a good book as a sedative is conspicuous waste. To fall asleep or, what is the same, to let your mind wander during the hours you planned to devote to reading for profit—that is, primarily for understanding—is clearly to defeat your own ends.

But the sad fact Is that many people who can distinguish between profit and pleasure —between understanding, on the one hand, and entertainment or the mere satisfaction of curiosity, on the other hand—nevertheless fail to carry out their reading plans. They fail even if they know which books give which. The reason is that they do not know how to be demanding readers, how to keep their mind on what they are doing by making it do the work without which no profit can be earned.

The Essence of Active Reading: The Four Basic Questions a Reader Asks

We have already discussed active reading extensively in this book. We have said that active reading is better reading, and we have noted that inspectional reading is always active. It is an effortful, not an effortless, undertaking. But we have not yet gone to the heart of the matter by stating the one simple prescription for active reading. It is: *Ask questions while you read—questions that you yourself must try to answer in the course of reading.*

Any questions? No. The art of reading on any level above the elementary consists in the habit of asking the right questions in the right order. There are four main questions you must ask about any book.

1. **WHAT IS THE BOOK ABOUT AS A WHOLE? You must try to discover the leading theme of the book, and how the author develops this theme in an orderly way by subdividing it into its essential subordinate themes or topics.**

2. **WHAT IS BEING SAID IN DETAIL, AND HOW? You must try to discover the main ideas, assertions, and arguments that constitute the author's particular message.**

3. **IS THE BOOK TRUE, IN WHOLE OR PART? You cannot answer this question until you have answered the first two. You have to know what is being said before you can decide whether it is true or not. When you understand a book, however, you are obligated, if you are reading seriously, to make up your own mind. Knowing the author's mind is not enough.**

4. **WHAT OF IT? If the book has given you information, you must ask about its significance. Why does the author think it is important to know these things? Is it important to you to know them? And if the book has not only informed you, but also enlightened you, it is necessary to seek further enlightenment by asking what else follows, what is further implied or suggested.**

We will return to these four questions at length in the rest of this book. Stated another way, they become the basic rules of reading with which Part Two is mainly concerned. They are stated here in question form for a very good reason. Reading a book on any level beyond the elementary is essentially an effort on your part to ask it questions (and to answer them to the best of your ability). That should never be forgotten. And that is why there is all the difference in the world between the demanding and the undemanding reader. The latter asks no questions—and gets no answers.

The four questions stated above summarize the whole obligation of a reader. They apply to anything worth reading—a book or an article or even an advertisement. Inspectional reading tends to provide more accurate answers to the first two questions than to the last two, but it nevertheless helps with those also. An analytical reading of a book has not been accomplished satisfactorily until you have answers to those last questions—until you have some idea of the book's truth, in whole or part, and of its significance, if only in your own scheme of things. The last question—What of it?—is probably the most important one in syntopical reading. Naturally, you will have to answer the first three questions before attempting the final one.

Knowing what the four questions are is not enough. You must remember to ask them as you read. The *habit* of doing that is the mark of a demanding reader. More than that, you must know how to answer them precisely and accurately. The trained ability to do that is the *art* of reading.

People go to sleep over good books not because they are unwilling to make the effort, but because they do not know how to make it. Good books are over your head; they would not be good for you if they were not. And books that are over your head weary you unless you can reach up to them and pull yourself up to their level. It is not the stretching that tires you, but the frustration of stretching unsuccessfully because you lack the skill to stretch effectively. To keep on reading actively, you must have not only the will to do so, but also the skill—the art that enables you to elevate yourself by mastering what at first sight seems to be beyond you.

How to Make a Book Your Own

If you have the habit of asking a book questions as you read, you are a better reader than if you do not. But, as we have indicated, merely asking questions is not enough. You have to try to answer them. And although that could be done, theoretically, in your mind only, it is much easier to do it with a pencil in your hand. The pencil then becomes the sign of your alertness while you read.

It is an old saying that you have to “read between the lines” to get the most out of anything. The rules of reading are a formal way of saying this. But we want to persuade you to “write between the lines,” too. Unless you do, you are not likely to do the most efficient kind of reading.

When you buy a book, you establish a property right in it, just as you do in clothes or furniture when you buy and pay for them. But the act of purchase is actually only the prelude to possession in the case of a book. Full ownership of a book only comes when you have made it a part of yourself, and the best way to make yourself a part of it—which comes to the same thing—is by writing in it.

Why is marking a book indispensable to reading it? First, it keeps you awake— not merely conscious, but wide awake. Second, reading, if it is active, is thinking, and thinking tends to express itself in words, spoken or written. The person who says he knows what he thinks but cannot express it usually does not know what he thinks. Third, writing your reactions down helps you to remember the thoughts of the author.

Reading a book should be a conversation between you and the author. Presumably he knows more about the subject than you do; if not, you probably should not be bothering with his book. But understanding is a two-way operation; the learner has to question himself and question the teacher. He even has to be willing to argue with the teacher, once he understands what the teacher is saying. Marking a book is literally an expression of your differences or your agreements with the author. It is the highest respect you can pay him.

There are all kinds of devices for marking a book intelligently and fruitfully. Here are some devices that can be used:

1. UNDERLINING—of major points; of important or forceful statements.
2. VERTICAL LINES AT THE MARGIN—to emphasise a statement already underlined or to point to a passage too long to be underlined.

3. STAR, ASTERISK, OR OTHER DOODAD AT THE MARGIN—to be used sparingly, to emphasise the ten or dozen most important statements or passages in the book. You may want to fold a corner of each page on which you make such marks or place a slip of paper between the pages. In either case, you will be able to take the book off the shelf at any time and, by opening it to the indicated page, refresh your recollection.

4. NUMBERS IN THE MARGIN—to indicate a sequence of points made by the author in developing an argument.

5. NUMBERS OF OTHER PAGES IN THE MARGIN—to indicate where else in the book the author makes the same points, or points relevant to or in contradiction of those here marked; to tie up the ideas in a book, which, though they may be separated by many pages, belong together. Many readers use the symbol “Cf ” to indicate the other page numbers; it means “compare” or “refer to.”

6. CIRCLING OF KEY WORDS OR PHRASES—This serves much the same function as underlining.

7. WRITING IN THE MARGIN, OR AT THE TOP OR BOTTOM OF THE PAGE—to record questions (and perhaps answers) which a passage raises in your mind; to reduce a complicated discussion to a simple statement; to record the sequence of major points right through the book. The endpapers at the back of the book can be used to make a personal index of the author’s points in the order of their appearance. To inveterate book-markers, the front endpapers are often the most important. Some people reserve them for a fancy bookplate. But that expresses only their financial ownership of the book. The front endpapers are better reserved for a record of your thinking. After finishing the book and making your personal index on the back endpapers, turn to the front and try to outline the book, not page by page or point by point (you have already done that at the back), but as an integrated structure, with a basic outline and an order of parts. That outline will be the measure of your understanding of the work; unlike a bookplate, it will express your intellectual ownership of the book.

The Three Kinds of Note-making

There are three quite different kinds of notes that you will make in your books as well as about them. Which kind you make depends upon the level at which you are reading.

When you give a book an inspectional reading, you may not have much time to make notes in it; inspectional reading, as we have observed, is always limited as to time. Nevertheless, you are asking important questions about a book when you read it at this level, and it would be desirable, even if it is not always possible, to record your answers when they are fresh in your mind.

The questions answered by inspectional reading are: first, what kind of book is it? second, what is it about as a whole? and third, what is the structural order of the

work whereby the author develops his conception or understanding of that general subject matter? You may and probably should make notes concerning your answers to these questions, especially if you know that it may be days or months before you will be able to return to the book to give it an analytical reading. The best place to make such notes is on the contents page, or perhaps on the title page, which are otherwise unused in the scheme we have outlined above.

The point to recognize is that these notes primarily concern the structure of the book, and not its substance—at least not in detail. *We therefore call this kind of note-making structural.*

In the course of an inspectional reading, especially of a long and difficult book, you may attain some insights into the author's ideas about his subject matter. Often, however, you will not; and certainly you should put off making any judgment of the accuracy or truth of the statements until you have read the book more carefully. Then, during an analytical reading, you will need to give answers to questions about the truth and significance of the book. The notes you make at this level of reading are, therefore, not structural but *conceptual.* They concern the author's concepts, and also your own, as they have been deepened or broadened by your reading of the book.

There is an obvious difference between structural and conceptual note-making. What kind of notes do you make when you are giving several books a syntopical reading—when you are reading more than one book on a single subject? Again, such notes will tend to be conceptual; and the notes on a page may refer you not only to other pages in that book, but also to pages in other books.

There is a step beyond even that, however, and a truly expert reader can take it when he is reading several books syntopically. That is to make notes about the *shape of the discussion*—the discussion that is engaged in by all of the authors, even if unbeknownst to them. For reasons that will become clear in Part Four, we prefer to call such notes *dialectical.* Since they are made concerning several books, not just one, they often have to be made on a separate sheet (or sheets) of paper. Here, a structure of concepts is implied

—an order of statements and questions about a single subject matter. We will return to this kind of note-making in Chapter 20.

Forming the Habit of Reading

Any art or skill is possessed by those who have formed the habit of operating according to its rules. This is the way the artist or craftsman in any field differs from those who lack his skill.

Now there is no other way of forming a habit of operation than by operating. That is what it means to say one learns to do by doing. The difference between your activity before and after you have formed a habit is a difference in facility and readiness. After practice, you can do the same thing much better than when you started. That is what it means to say practice makes perfect. What you do very imperfectly at first, you gradually come to do with the kind of almost automatic perfection that an instinctive performance has. You do something as if you were born to it, as if the activity were as natural to you as walking or eating. That is what it means to say that habit is second nature.

Knowing the rules of an art is not the same as having the habit. When we speak of a man as skilled in any way, we do not mean that he knows the rules of making or doing something, but that he possesses the habit of making or doing it. Of course, it is true that knowing the rules, more or less explicitly, is a condition of getting the skill. You cannot follow rules you do not know. Nor can you acquire an artistic habit—any craft or skill—without following rules. The art as something that can be taught consists of rules to be followed in operation. The art as something learned and possessed consists of the habit that results from operating according to the rules.

Incidentally, not everyone understands that being an artist consists in operating according to rules. People point to a highly original painter or sculptor and say, “He isn’t following rules. He’s doing something entirely original, something that has never been done before, something for which there are no rules.” But they fail to see what rules it is that the artist follows. There are no final, unbreakable rules, strictly speaking, for making a painting or sculpture. But there are rules for preparing canvas and mixing paints and applying them, and for molding clay or welding steel. Those rules the painter or sculptor must have followed, or else he could not have made the thing he has made. No matter how original his final production, no matter how little it seems to obey the “rules” of art as they have traditionally been understood, he must be skilled to produce it. And this is the art —the skill or craft— that we are talking about here.

From Many Rules to One Habit

Reading is like skiing. When done well, when done by an expert, both reading and skiing are graceful, harmonious activities. When done by a beginner, both are awkward, frustrating, and slow.

Learning to ski is one of the most humiliating experiences an adult can undergo (that is one reason to start young). After all, an adult has been walking for a long time; he knows where his feet are; he knows how to put one foot in front of the other in order to get somewhere. But as soon as he puts skis on his feet, it is as though he had to learn to walk all over again. He slips and slides, falls down, has trouble getting up, gets his skis crossed, tumbles again, and generally looks—and feels—like a fool.

Even the best instructor seems at first to be no help. The ease with which the instructor performs actions that he says are simple but that the student secretly believes are impossible is almost insulting. How can you remember everything the instructor says you have to remember? Bend your knees. Look down the hill. Keep your weight on the downhill ski. Keep your back straight, but nevertheless lean forward. The admonitions seem endless—how can you think about all that and still ski?

The point about skiing, of course, is that you should not be thinking about the separate acts that, together, make a smooth turn or series of linked turns—instead, you should merely be looking ahead of you down the hill, anticipating bumps and other skiers, enjoying the feel of the cold wind on your cheeks, smiling with pleasure at the fluid grace of your body as you speed down the mountain. In other words, you must learn to forget the separate acts in order to perform all of them, and indeed any of them, well. But in order to forget them as separate acts, you have to learn them first as separate acts. Only then can you put them together to become a good skier.

It is the same with reading. Probably you have been reading for a long time, too, and starting to learn all over again can be humiliating. But it is just as true of reading as it is of skiing that you cannot coalesce a lot of different acts into one complex, harmonious performance until you become expert at each of them. You cannot telescope the different parts of the job so that they run into one another and fuse intimately. Each separate act requires your full attention while you are doing it. After you have practiced the parts separately, you can not only do each with greater facility and less attention but can also gradually put them together into a smoothly running whole.

All of this is common knowledge about learning a complex skill. We say it here merely because we want you to realize that learning to read is at least as complex as learning to ski or to typewrite or to play tennis. If you can recall your patience in any other learning experience you have had, you will be more tolerant of instructors who will shortly enumerate a long list of rules for reading.

The person who has had one experience in acquiring a complex skill knows that he need not fear the array of rules that present themselves at the beginning of something new to be learned. He knows that he does not have to worry about how all the separate acts in which he must become separately proficient are going to work together.

The multiplicity of the rules indicates the complexity of the one habit to be formed, not a plurality of distinct habits. The parts coalesce and telescope as each reaches the stage of automatic execution. When all the subordinate acts can be done more or less automatically, you have formed the habit of the whole performance. Then you can think about tackling an expert run you have never skied before, or reading a book that you once thought was too difficult for you. At the beginning, the learner pays attention to himself and his skill in the separate acts. When the acts have lost their separateness in the skill of the whole performance, the learner can at last pay attention to the goal that the technique he has acquired enables him to reach.

We hope we have encouraged you by the things we have said in these pages. It is hard to learn to read well. Not only is reading, especially analytical reading, a very complex activity—much more complex than skiing—it is also much more of a mental activity. The beginning skier must think of physical acts that he can later forget and perform almost automatically. It is relatively easy to think of and be conscious of physical acts. It is much harder to think of mental acts, as the beginning analytical reader must do; in a sense, he is thinking about his own thoughts. Most of us are unaccustomed to doing this. Nevertheless, it can be done, and a person who does it cannot help learning to read much better. I. These four questions, as stated, together with the discussion of them that follows, apply mainly to expository or nonfiction works. However, the questions, when adapted, apply to fiction and poetry as well. The adaptations required are discussed in Chapters 14 and 15.

Inspectional Reading I: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed
4. Read or Listen The Full Book Without Stopping
5. Read or listen 25min and 5min break
    - Read or Listen 20 pages an Hour according Mortimer Adler
6. Read or Listen between 1-50 times the book
7. Speed of Audiobook.
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed.
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Inspectional Reading II: Superficial Reading

1. Read or Listen The Full Book Without Stopping.
2. That rule is simply this: In tackling a difficult book for the first time, read it through without ever stopping to look up or ponder the things you do not understand right away.
3. Pay attention to what you can understand and do not be stopped by what you cannot immediately grasp. Go right on reading past the point where you have difficulties in understanding, and you will soon come to things you do understand. Concentrate on these.

The Third Level of Reading: Analytical Reading

Pigeonholing a Book

We said at the beginning of this book that the instruction in reading that it provides applies to anything you have to or want to read. However, in expounding the rules of analytical reading, as we will do in Part Two, we may seem to be ignoring that fact. We will usually, if not always, refer to the reading of whole books. Why is this so?

The answer is simple. Reading a whole book, and especially a long and difficult one, poses the severest problems any reader can face. Reading a short story is almost always easier than reading a novel; reading an article is almost always easier than reading a book on the same subject. If you can read an epic poem or a novel, you can read a lyric or a short story; if you can read an expository book—a history, a philosophical work, a scientific treatise—you can read an article or abstract in the same field.

Hence everything that we will say about reading books applies to reading other materials of the kinds indicated. You are to understand, when we refer to the reading of books, that the rules expounded refer to lesser and more easily understood materials, too. Sometimes the rules do not apply to the latter in quite the same way, or to the extent that they apply to whole books. Nevertheless, it will always be easy for you to adapt them so that they are applicable.

The Importance of Classifying Books

Analysis of Genre.

RULE 1. YOU MUST KNOW WHAT KIND OF BOOK YOU ARE READING, AND YOU SHOULD KNOW THIS AS EARLY IN THE PROCESS AS POSSIBLE, PREFERABLY BEFORE YOU BEGIN TO READ. Is This a Fiction Book or Non Fiction Book?

You must know, for instance, whether you are reading fiction—a novel, a play, an epic, a lyric—or whether it is an expository work of some sort. Almost every reader knows a work of fiction when he sees it. Or so it seems—and yet this is not always easy. Is *Portnoy's Complaint* a novel or a psychoanalytical study? Is *Naked Lunch* a fiction or a tract against drug abuse, similar to the books that used to recount the horrors of alcohol for the betterment of readers? Is *Gone with the Wind* a romance or a history of the South before and during the Civil War? Do *Main Street* and *The Grapes of Wrath* belong in the category of belles-lettres or are both of them sociological studies, the one concentrating on urban experiences, the other on agrarian life?

All of these, of course, are novels; all of them appeared on the fiction side of the best-seller lists. Yet the questions are not absurd. Just by their titles, it would be hard to tell in the case of *Main Street* and *Middletown* which was fiction and which was social science.

There is so much social science in some contemporary novels, and so much fiction in much of sociology, that it is hard to keep them apart. But there is another kind of science, too—physics and chemistry, for instance—in books like *The Andromeda Strain* or the novels of Robert Heinlein or Arthur C. Clarke. And a book like *The Universe and Dr. Einstein,* while clearly not fiction, is almost as "readable" as a novel, and probably more readable than some of the novels of, say, William Faulkner.

An expository book is one that conveys knowledge primarily, "knowledge" being construed broadly. Any book that consists primarily of opinions, theories, hypotheses, or speculations, for which the claim is made more or less explicitly that they are true in some sense, conveys knowledge in this meaning of knowledge and is an expository work. As with fiction, most people know an expository work when they see it. Here, however, the problem is not to distinguish nonfiction from fiction, but to recognize that there are various kinds of expository books. It is not merely a question of knowing which books are primarily instructive, but also which are instructive in a particular way. The kinds of information or enlightenment that a history and a philosophical work afford are not the same. The problems dealt with by a book on physics and one on morals are not the same, nor are the methods the writers employ in solving such different problems.

Thus this first rule of analytical reading, though it is applicable to all books, applies particularly to nonfictional, expository works. How do you go about following the rule, particularly its last clause?

As we have already suggested, you do so by first inspecting the book—giving it an inspectional reading. You read the title, the subtitle, the table of contents, and you at least glance at the preface or introduction by the author and at the index. If the book has a dust jacket, you look at the publisher's blurb. These are the signal flags the author waves to let you know which way the wind is blowing. It is not his fault if you will not stop, look, and listen.

What You Can Learn from the Title of a Book

The numbers of readers who pay no attention to the signals is larger than you might expect. We have had this experience again and again with students. We have asked them what a book was about. We have asked them, in the most general terms, to tell us what sort of book it was. This is a good way, almost an indispensable way, to begin a discussion of a book. Nevertheless, it is often hard to get any kind of answer to the question.

Let us take a couple of examples of the kind of confusion that can occur. In 1859, Darwin published a very famous book. A century later the entire English-speaking world celebrated the publication of the book. It was discussed endlessly, and its influence was assessed by learned and not-so-learned commentators. The book was about the theory of evolution, and the word "species" was in the title. What was the title?

Probably you said *The Origin of Species,* in which case you were correct. But you might not have said that. You might have said that the title was *The Origin of the Species.* Recently, we asked some twenty-five reasonably well-read persons what the title of Darwin's book was and more than half said *The Origin of the Species.* The reason for the mistake is obvious; they supposed, never having read the book, that it had something to do with the development of the human species. In fact, it has little or nothing to do with that subject, which Darwin covered in a later book, *The Descent of Man. The Origin of Species* is about what its title says it is about—namely the proliferation in the natural world of a vast number of species of plants and animals from an originally much smaller number of species, owing mainly to the principle of natural selection. We mention this common error because many think they know the title of the book, although few have actually ever read the title carefully and thought about what it means.

Here is another example. In this case we will not ask you to remember the title, but to think about what it means. Gibbon wrote a famous, and famously long, book about the Roman Empire. He called it *The Decline and Fall of the Roman Empire.* Almost everybody who takes up the book recognizes that title; and most people, even without the book in their hand, know the title. Indeed, the phrase "decline and fall" has become proverbial. Nevertheless, when we asked the same twenty-five well-read people why the first chapter is called "The Extent and Military Force of the Empire in the Age of the Antonines," they had no idea. They did not see that if the book as a whole was titled *Decline and Fall,* then it might be assumed that the narrative would begin with the high point of the Roman Empire, and continue through to the end. Unconsciously, they had translated "decline and fall" into "rise and fall." They were puzzled because there was no discussion of the Roman Republic, which ended a century and a half before the Age of the Antonines. If they had read the title carefully they could have assumed that the Age of the Antonines was the high point of the Empire, even if they had not known it before. Reading the title, in other words, could have given them essential information about the book before they started to read it; but they had failed to do that, as most people fail to do even with an unfamiliar book.

One reason why titles and prefaces are ignored by many readers is that they do not think it important to classify the book they are reading. They do not follow this first rule of analytical reading. If they tried to follow it, they would be grateful to the author for helping them. Obviously, the author thinks it is important for the reader to know the kind of book he is being given. That is why he goes to the trouble of making it plain in the preface, and usually tries to make his title—or at least his subtitle—descriptive. Thus, Einstein and Infeld, in their preface to *The Evolution of Physics,* tell the reader that they expect him to know "that a scientific book, even though popular, must not be read in the same way as a novel." They also construct an analytical table of contents to advise the reader in advance of the details of their treatment. In any event, the chapter headings listed in the front serve the purpose of amplifying the significance of the main title.

The reader who ignores all these things has only himself to blame if he is puzzled by the question, What kind of book is this? He is going to become more perplexed. If he cannot answer that question, and if he never asks it of himself, he is going to be unable to answer a lot of other questions about the book. Important as reading titles is, it is not

enough. The clearest titles in the world, the most explicit front matter, will not help you to classify a book unless you have the broad lines of classification already in your mind.

You will not know the sense in which Euclid's *Elements of Geometry* and William James' *Principles of Psychology* are books of the same sort if you do not know that psychology and geometry are both sciences—and, incidentally, if you do not know that "elements" and "principles" mean much the same thing in these two titles (though not in general), nor will you further be able to distinguish them as different unless you know there are different kinds of science. Similarly, in the case of Aristotle's *Politics* and Adam Smith's *The Wealth of Nations,* you can tell how these books are alike and different only if you know what a practical problem is, and what different kinds of practical problems there are.

Titles sometimes make the grouping of books easy. Anyone would know that Euclid's *Elements,* Descartes' *Geometry,* and Hilbert's *Foundations of Geometry* are three mathematical books, more or less closely related in subject matter. This is not always the case. It might not be so easy to tell from the titles that Augustine's *The City of God,* Hobbes' *Leviathan,* and Rousseau's *Social Contract* are political treatises, although a careful perusal of their chapter headings would reveal the problems that are common to these three books.

Again, however, to group books as being of the same kind is not enough; to follow this first rule of reading you must know *what that kind is.* The title will not tell you, nor all the rest of the front matter, nor even the whole book itself sometimes, unless you have some categories you can apply to classify books intelligently. In other words, this rule has to be made a little more intelligible if you are to follow it intelligently. It can only be made intelligible by drawing distinctions and thus creating categories that make sense and will stand up to the test of time.

We have already discussed a rough classification of books. The main distinction, we said, was between works of fiction, on the one hand, and works conveying knowledge, or expository works, on the other hand. Among expository works, we can further distinguish history from philosophy, and both from science and mathematics.

Now this is all very well as far as it goes. This is a classification scheme with fairly perspicuous categories, and most people could probably place most books in the right category if they thought about it. But not all books in all categories.

The trouble is that as yet we have no principles of classification. We will have more to say about these principles as we proceed in our discussion of the higher levels of reading. For the moment, we want to confine ourselves to one basic distinction, a distinction that applies across the board to all expository works. It is the distinction between theoretical and practical works.

Practical vs. Theoretical Books

Everyone uses the words “theoretical” and “practical,” but not everyone knows what they mean, perhaps least of all the hardheaded practical man who distrusts all theorists, especially if they are in the government. For such persons, “theoretical” means visionary or even mystical; “practical” means something that works, something that has an immediate cash return. There is an element of truth in this. The practical has to do with what works in some way, at once or in the long run. The theoretical concerns something to be seen or understood. If we polish the rough truth that is here being grasped, we come to the distinction between knowledge and action as the two ends a writer may have in mind.

But, you may say, in dealing with expository books, are we not dealing with books that convey knowledge? How does action come into it? The answer, of course, is that intelligent action depends on knowledge. Knowledge can be used in many ways, not only for controlling nature and inventing useful machines or instruments but also for directing human conduct and regulating man’s operations in various fields of skill. What we have in mind here is exemplified by the distinction between pure and applied science, or, as it is sometimes very inaccurately expressed, between science and technology.

Some books and some teachers are interested only in the knowledge itself that they have to communicate. This does not mean that they deny its utility, or that they insist that knowledge is good *only* for its own sake. They simply limit themselves to one kind of communication or teaching, and leave the other kind to other men. These others have an interest beyond knowledge for its own sake. They are concerned with the problems of human life that knowledge can help to solve. They communicate knowledge, too, but always with a view to and an emphasis upon its application.

To make knowledge practical we must convert it into rules of operation. We must pass from knowing *what is the case* to knowing *what to do about it if we wish to get somewhere.* This can be summarized in the distinction between knowing *that* and knowing *how.* Theoretical books teach you *that* something is the case. Practical books teach you *how* to do something you want to do or think you should do.

This book is practical, not theoretical. Any guidebook is a practical book. Any book that tells you either what you *should* do or *how* to do it is practical. Thus you see that the class of practical books includes all expositions of arts to be learned, all manuals of practice in any field, such as engineering or medicine or cooking, and all treatises that are conveniently classified as moral, such as books on economic, ethical, or political problems. We will later explain why this last group of books, properly called “normative,” constitutes a very special category of practical books.

Probably no one would question our calling expositions of arts to be learned and manuals or rule books, practical works. But the “practical” man to whom we have referred might object to the notion that a book on ethics, say, or one on economics, was practical. He might say that such a book was not practical because it was not true or would not work.

In fact, this is irrelevant to the point, although a book about economics that is not true is a bad book. Strictly speaking, any ethical work teaches us how to live our lives, tells us what we should do and not do, and often informs us of the rewards and punishments attached to doing and not doing it. Thus, whether or not we agree with its conclusions, any such work is practical. (Some modern sociological studies merely report the actual behavior of men, without judging it. These are neither ethical nor practical books. They are theoretical works—works of science.)

Similarly with a work on economics. Apart from reportorial, mathematical, or statistical studies of economic behavior, which are theoretical rather than practical, such works usually teach us how to organize our economic life, either as individuals or as societies or states, tell us what we should do and not do, and also inform us of the penalties involved if we do not do what we should. Again, we may disagree, but our disagreement does not make the book unpractical.

Immanuel Kant wrote two famous philosophical works, one called *The Critique of Pure Reason,* the other, *The Critique of Practical Reason.* The first is about what is and how we know it—not how *to* know it, but how we in fact *do* know it—as well as about what can and cannot be known. It is a theoretical book *par excellence. The Critique of Practical Reason* is about how men should conduct themselves and about what constitutes virtuous or right conduct. This book places great emphasis on duty as the basis of all right action, and that emphasis may seem repellent to many modern readers. They may even say it is "impractical" to believe that duty is any longer a useful ethical concept. What they mean, of course, is that Kant is wrong, in their opinion, in his basic approach. But that does not mean that his book is any less a practical work in the sense we are employing here.

Apart from manuals and moral treatises (in the broad sense) one other instance of practical writing should be mentioned. An oration—a political speech or moral exhortation —certainly tries to tell you what you should do or how you should feel about something. Anyone who writes practically about anything not only tries to advise you but also tries to persuade you to follow his advice. Hence there is an element of oratory or exhortation in every moral treatise. It is also present in books that try to teach an art, such as this one. Thus, in addition to trying to teach you to read better, we have tried, and will continue to try, to persuade you to make the effort to do so.

Although every practical book is somewhat oratorical and hortatory, it does not follow that oratory and exhortation are coextensive with the practical. There is a difference between a political harangue and a treatise on politics, between economic propaganda and an analysis of economic problems. The *Communist Manifesto* is a piece of oratory, but Marx's *Capital* is much more than that.

Sometimes you can detect that a book is practical by its title. If the title contains such phrases as "the art of " or "how to," you can spot it at once. If the title names fields that you know are practical, such as ethics or politics, engineering or business, and in many cases economics, law, or medicine, you can classify the book fairly readily.

Titles can tell you even more than that. John Locke wrote two books with similar titles: *An Essay Concerning Human Understanding* and *A Treatise Concerning the Origin, Extent, and End of Civil Government.* Which of these is theoretical, which practical?

From the titles alone we may conclude that the first is theoretical, because any analysis of understanding would be theoretical, and that the second is practical, because problems of government are themselves practical. But one could go beyond that, employing the techniques of inspectional reading that we have described.

Locke wrote an introduction to the book on understanding. There he expressed his intention as being to inquire into the "origin, certainty, and extent of human knowledge." The phrasing resembles the title of the book on government, but with one important difference. Locke was concerned with the *certainty* or validity of knowledge in the one case, and with the *end* or purpose of government in the other. Questions about the validity of something are theoretical, whereas to raise questions about the end of anything, the purpose it serves, is practical.

In describing the art of inspectional reading, we noted that you should not ordinarily stop after reading the front matter of a book and perhaps its index. You should read passages in the book that appear to be of a summary nature. You should also read the beginning and end of the book and of its major parts.

This becomes necessary when, as is sometimes the case, it is impossible to classify a book from its title and other front matter. In that case, you have to depend on signs to be found in the main body of the text. By paying attention to the words and keeping the basic categories in mind, you should be able to classify a book without reading very far.

A practical book will soon betray its character by the frequent occurrence of such words as "should" and "ought," "good" and "bad," "ends" and "means." The characteristic statement in a practical book is one that says that something should be done (or made); or that this is the right way of doing (or making) something; or that one thing is better than another as an end to be sought, or a means to be chosen. In contrast, a theoretical book keeps saying "is," not "should" or "ought." It tries to show that something is true, that these are the facts; not that things would be better if they were otherwise, and here is the way to make them better.

Before turning to theoretical books, let us caution you against supposing that the problem is as simple as telling whether you are drinking coffee or milk. We have merely suggested some signs whereby you can begin to make discriminations. The better you understand everything that is involved in the distinction between the theoretical and the practical, the better you will be able to use the signs.

For one thing, you will have to learn to mistrust them. You have to be suspicious in classifying books. We have noted that although economics is primarily and usually a practical matter, there are nevertheless books on economics that are purely theoretical. Similarly, although understanding is primarily and usually a theoretical matter, there are books (most of them are terrible) that purport to teach you "how to think." You will also find

authors who do not know the difference between theory and practice, just as there are novelists who do not know the difference between fiction and sociology. You will find books that are partly of one sort and partly of another, such as Spinoza's *Ethics.* It remains, nevertheless, to your advantage as a reader to detect the way an author approaches his problem.

Kinds of Theoretical Books

The traditional subdivision of theoretical books classifies them as history, science, and philosophy. Everybody knows the differences here in a rough way. It is only when you try to refine the obvious, and give the distinctions greater precision, that you get into difficulties. For the moment, let us try to skirt that danger and let rough approximations suffice.

In the case of history, the title usually does the trick. If the word "history" does not appear in the title, the rest of the front matter is likely to inform us that this is a book about something that happened in the past—not necessarily in the far past, of course, because it may have happened only yesterday. The essence of history is narration. History is knowledge of particular events or things that not only existed in the past but also underwent a series of changes in the course of time. The historian narrates these happenings and often colors his narrative with comment on, or insight into, the significance of the events.

History is chronotopic. *Chronos* is the Greek word for time, *topos* the Greek word for place. History always deals with things that existed or events that occurred on a particular date and in a particular place. The word "chronotopic" can remind you of that.

Science is not concerned with the past as such. It treats of matters than can happen at *any* time or place. The scientist seeks laws or generalizations. He wants to find out how things happen for the most part or in every case, not, as the historian does, how some particular things happened at a given time and place in the past.

The title of a scientific work is usually less revealing than the title of a history book. The word "science" sometimes appears, but more often the name of the subject matter appears, such as psychology or geology or physics. Then we must know whether that subject matter belongs to the scientist, as geology clearly does, or to the philosopher, as metaphysics clearly does. The trouble comes with the cases that are not so clear, such as physics and psychology, which have been claimed, at various times, by both scientists and philosophers. There is even trouble with the very words "philosophy" and "science," for they have been variously used. Aristotle called his book on *Physics* a scientific treatise, although according to current usage we should regard it as philosophical; and Newton titled his great work *Mathematical Principles of Natural Philosophy,* though for us it is one of the masterpieces of science.

Philosophy is like science and unlike history in that it seeks general truths rather than an account of particular events, either in the near or distant past. But the philosopher does

not ask the same questions as the scientist, nor does he employ the same kind of method to answer them.

Since titles and subject-matter names are not likely to help us determine whether a book is philosophical or scientific, how can we tell? There is one criterion that we think always works, although you may have to read a certain amount of the book before you can apply it. If a theoretical book emphasizes things that lie outside the scope of your normal, routine, daily experience, it is a scientific work. If not, it is philosophical.

The distinction may be surprising. Let us illustrate it. (Remember that it applies only to books that are either science or philosophy, not to books that are neither.) Galileo's *Two New Sciences* requires you to imagine, or to repeat for yourself in a laboratory, certain experiments with inclined planes. Newton's *Opticks* refers to experiences in dark rooms with prisms, mirrors, and specially controlled rays of light. The special experience to which the author refers may not have been obtained by him in a laboratory. The facts that Darwin reported in *The Origin of Species* he observed in the course of many years of work in the field. They are facts that can be and have been rechecked by other observers making a similar effort. But they are not facts that can be checked in terms of the ordinary daily experience of the average man.

In contrast, a philosophical book appeals to no facts or observations that lie outside the experience of the ordinary man. A philosopher refers the reader to his own normal and common experience for the verification or support of anything the writer has to say. Thus, Locke's *Essay Concerning Human Understanding* is a philosophical work in psychology, whereas many of Freud's writings are scientific. Locke makes every point in terms of the experience all of us have of our own mental processes. Freud can make many of his points only by reporting what he observed under the clinical conditions of the psychoanalyst's office.

William James, another great psychologist, took an interesting middle course. He reports many examples of the special experience that only the careful, trained observer can know about, but he also frequently asks the reader to judge whether what is being said is not true from his own experience. Thus James' *Principles of Psychology* is both a scientific and a philosophical work, although it is primarily scientific.

The distinction proposed here is popularly recognized when we say that science is experimental or depends upon elaborate observational researches, whereas philosophy is merely armchair thinking. The contrast should not be invidious. There are certain problems, some of them very important, that can be solved in an armchair by a man who knows how to think about them in the light of common, human experience. There are other problems that no amount of the best armchair thinking can solve. What is needed to solve them is investigation of some sort— experiments in the laboratory or research in the field —extending experience beyond the normal, everyday routine. Special experience is required.

This does not mean that the philosopher is a pure thinker and the scientist merely an observer. Both have to observe and think, but they think about different sorts of

observations. And however they may have arrived at the conclusions that they want to prove, they prove them in different ways, the scientist by pointing to the results of his special experiences, the philosopher by pointing to experiences that are common to all.

This difference in method always reveals itself in philosophical and scientific books, and that is how you can tell which sort of book you are reading. If you note the sort of experience that is being referred to as a condition of understanding what is being said, you will know whether the book is scientific or philosophical.

It is important to know this because, apart from the different kinds of experiences that they depend on, scientists and philosophers do not think in exactly the same way. Their styles in arguing are different. You must be able to find the terms and propositions—here we are getting a little ahead of ourselves—that constitute these different sorts of argumentation.

The same is true of history. Historical statements are different from scientific and philosophical ones. A historian argues differently and interprets facts differently. Furthermore, the typical history book is narrative in form. A narrative is a narrative, whether it be fact or fiction. The historian must write poetically, which means he must obey the rules for telling a good story. Whatever other excellences Locke's *Essay on Human Understanding* or Newton's *Principia* may have, neither is a good story.

You may object that we are making too much of the classification of books, at least before one has read them. Is it really all that important?

We may be able to meet the objections by calling your attention to one obvious fact. If you walked into a classroom in which a teacher was lecturing or otherwise instructing students, you could tell very soon whether the class was one in history, science, or philosophy. There would be something in the way the teacher proceeded, the kind of words he used, the type of arguments he employed, the sort of problems he proposed, and the kind of responses he expected from his students, that would give him away as belonging to one department or another. And it would make a difference to you to know this, if you were going to try to listen intelligently to what went on.

In short, the methods of teaching different kinds of subject matter are different. Any teacher knows this. Because of the difference in method and subject matter, the philosopher usually finds it easier to teach students who have not been previously taught by his colleagues, whereas the scientist prefers the student whom his colleagues have already prepared. And so forth and so on.

Now, just as there is a difference in the art of teaching in different fields, so there is a reciprocal difference in the art of being taught. The activity of the student must somehow be responsive to the activity of the instructor. The relation between books and their readers is the same as that between teachers and their students. Hence, as books differ in the kinds of knowledge they have to communicate, they proceed to instruct us differently; and, if we are to follow them, we must learn to read each kind in an appropriate manner. Analyse the Book based on each Book Genre. Below are list of the Kind of Books.

Different Kind Of Books

1. Practical vs. Theoretical Books.

Everyone uses the words “theoretical” and “practical,” but not everyone knows what they mean, perhaps least of all the hardheaded practical man who distrusts all theorists, especially if they are in the government. For such persons, “Theoretical” means visionary or even mystical; “practical” means something that works, something that has an immediate cash return. There is an element of truth in this. The practical has to do with what works in some way, at once or in the long run.

I. The theoretical concerns something to be seen or understood. If we polish the rough truth that is here being grasped, we come to the distinction between knowledge and action as the two ends a writer may have in mind. But, you may say, in dealing with expository books, are we not dealing with books that convey knowledge? How does action come into it? The answer, of course, is that intelligent action depends on knowledge. Knowledge can be used in many ways, not only for controlling nature and inventing useful machines or instruments but also for directing human conduct and regulating man’s operations in various fields of skill. What we have in mind here is exemplified by the distinction between pure and applied science, or, as it is sometimes very inaccurately expressed, between science and technology. Some books and some teachers are interested only in the knowledge itself that they have to communicate. This does not mean that they deny its utility, or that they insist that knowledge is good only for its own sake. They simply limit themselves to one kind of communication or teaching, and leave the other kind to other men.These others have an interest beyond knowledge for its own sake. They are concerned with the problems of human life that knowledge can help to solve. They communicate knowledge, too, but always with a view to and an emphasis upon its application. To make knowledge practical we must convert it into rules of operation. We must pass from knowing what is the case to knowing what to do about it if we wish to get somewhere. This can be summarized in the distinction between knowing that and knowing how. Theoretical books teach you that something is the case. Practical books teach you how to do something you want to do or think you should do.

II. This book is practical, not theoretical. Any guidebook is a practical book. Any book that tells you either what you should do or how to do it is practical. Thus you see that the class of practical books includes all expositions of arts to be learned, all manuals of practice in any field, such as engineering or medicine or cooking, and all treatises that are conveniently classified as moral, such as books on economic, ethical, or

political problems. We will later explain why this last group of books, properly called “normative,” constitutes a very special category of practical books.Probably no one would question our calling expositions of arts to be learned and manuals or rule books, practical works. But the “practical” man to whom we have referred might object to the notion that a book on ethics, say, or one on economics, was practical. He might say that such a book was not practical because it was not true or would not work. In fact, this is irrelevant to the point, although a book about economics that is not true is a bad book. Strictly speaking, any ethical work teaches us how to live our lives, tells us what we should do and not do, and often informs us of the rewards and punishments attached to doing and not doing it. Thus, whether or not we agree with its conclusions, any such work is practical. (Some modern sociological studies merely report the actual behavior of men, without judging it. These are neither ethical nor practical books. They are theoretical works—works of science.) Similarly with a work on economics. Apart from reportorial, mathematical, or statistical studies of economic behavior, which are theoretical rather than practical, such works usually teach us how to organize our economic life, either as individuals or as societies or states, tell us what we should do and not do, and also inform us of the penalties involved if we do not do what we should. Again, we may disagree, but our disagreement does not make the book unpractical. Immanuel Kant wrote two famous philosophical works, one called The Critique of Pure Reason, the other, The Critique of Practical Reason. The first is about what is and how we know it—not how to know it, but how we in fact do know it—as well as about what can and cannot be known. It is a theoretical book par excellence. The Critique of Practical Reason is about how men should conduct themselves and about what constitutes virtuous or right conduct. This book places great emphasis on duty as the basis of all right action, and that emphasis may seem repellent to many modern readers. They may even say it is “impractical” to believe that duty is any longer a useful ethical concept. What they mean, of course, is that Kant is wrong, in their opinion, in his basic approach. But that does not mean that his book is any less a practical work in the sense we are employing here. Apart from manuals and moral treatises (in the broad sense) one other instance of practical writing should be mentioned. An oration—a political speech or moral exhortation—certainly tries to tell you what you should do or how you should feel about something. Anyone who writes practically about anything not only tries to advise you but also tries to persuade you to follow his advice. Hence there is an element of oratory or exhortation in every moral treatise. It

is also present in books that try to teach an art, such as this one. Thus, in addition to trying to teach you to read better, we have tried, and will continue to try, to persuade you to make the effort to do so.Although every practical book is somewhat oratorical and hortatory, it does not follow that oratory and exhortation are coextensive with the practical. There is a difference between a political harangue and a treatise on politics, between economic propaganda and an analysis of economic problems. The Communist Manifesto is a piece of oratory, but Marx's Capital is much more than that. Sometimes you can detect that a book is practical by its title. If the title contains such phrases as "the art of " or "how to," you can spot it at once. If the title names fields that you know are practical, such as ethics or politics, engineering or business, and in many cases economics, law, or medicine, you can classify the book fairly readily. Titles can tell you even more than that. John Locke wrote two books with similar titles: An Essay Concerning Human Understanding and A Treatise Concerning the Origin, Extent, and End of Civil Government. Which of these is theoretical, which practical? From the titles alone we may conclude that the first is theoretical, because any analysis of understanding would be theoretical, and that the second is practical, because problems of government are themselves practical. But one could go beyond that, employing the techniques of inspectional reading that we have described. Locke wrote an introduction to the book on understanding. There he expressed his intention as being to inquire into the "origin, certainty, and extent of human knowledge." The phrasing resembles the title of the book on government, but with one important difference. Locke was concerned with the certainty or validity of knowledge in the one case, and with the end or purpose of government in the other. Questions about the validity of something are theoretical, whereas to raise questions about the end of anything, the purpose it serves, is practical. In describing the art of inspectional reading, we noted that you should not ordinarily stop after reading the front matter of a book and perhaps its index. You should read passages in the book that appear to be of a summary nature. You should also read the beginning and end of the book and of its major parts. This becomes necessary when, as is sometimes the case, it is impossible to classify a book from its title and other front matter. In that case, you have to depend on signs to be found in the main body of the text. By paying attention to the words and keeping the basic categories in mind, you should be able to classify a book without reading very far. A practical book will soon betray its character by the frequent occurrence of such words as "should" and "ought," "good" and "bad," "ends" and

“means.” The characteristic statement in a practical book is one that says that something should be done (or made); or that this is the right way of doing (or making) something; or that one thing is better than another as an end to be sought, or a means to be chosen. In contrast, a theoretical book keeps saying “is,” not “should” or “ought.” It tries to show that something is true, that these are the facts; not that things would be better if they were otherwise, and here is the way to make them better. Before turning to theoretical books, let us caution you against supposing that the problem is as simple as telling whether you are drinking coffee or milk. We have merely suggested some signs whereby you can begin to make discriminations. The better you understand everything that is involved in the distinction between the theoretical and the practical, the better you will be able to use the signs. For one thing, you will have to learn to mistrust them. You have to be suspicious in classifying books. We have noted that although economics is primarily and usually a practical matter, there are nevertheless books on economics that are purely theoretical. Similarly, although understanding is primarily and usually a theoretical matter, there are books (most of them are terrible) that purport to teach you “how to think.” You will also find authors who do not know the difference between theory and practice, just as there are novelists who do not know the difference between fiction and sociology. You will find books that are partly of one sort and partly of another, such as Spinoza’s Ethics. It remains, nevertheless, to your advantage as a reader to detect the way an author approaches his problem.

2. Kinds of Theoretical Books.

The traditional subdivision of theoretical books classifies them as history, science, and philosophy. Everybody knows the differences here in a rough way. It is only when you try to refine the obvious, and give the distinctions greater precision, that you get into difficulties. For the moment, let us try to skirt that danger and let rough approximations suffice. In the case of history, the title usually does the trick. If the word “history” does not appear in the title, the rest of the front matter is likely to inform us that this is a book about something that happened in the past—not necessarily in the far past, of course, because it may have happened only yesterday. The essence of history is narration. History is knowledge of particular events or things that not only existed in the past but also underwent a series of changes in the course of time. The historian narrates these happenings and often colors his narrative with comment on, or insight into, the significance of the events. History is chronotopic. Chronos is the Greek word for time, topos the Greek word for place. History always deals with things that existed or events that occurred on a particular date and in a particular place. The word “chronotopic” can remind you of that. Science is not concerned with the past as such. It treats of matters than can happen at any time or place. The scientist seeks laws or generalizations. He wants to find out how things happen for the most part or in every case, not, as the historian does, how some particular things happened at a given time and place in the past. The title of a scientific work is usually less revealing than the title of a history book. The word “science” sometimes appears, but more often the name of the subject matter appears, such as psychology or geology or physics. Then we must know whether that subject matter belongs to the scientist, as geology clearly does, or to the philosopher, as metaphysics clearly does. The trouble comes with the cases that are not so clear, such as physics and psychology, which have been claimed, at various times, by both scientists and philosophers. There is even trouble with the very words “philosophy” and “science,” for they have been variously used. Aristotle called his book on Physics a scientific treatise, although according to current usage we should regard it as philosophical; and Newton titled his great work Mathematical Principles of Natural Philosophy, though for us it is one of the masterpieces of science. Philosophy is like science and unlike history in that it seeks general truths rather than an account of particular events, either in the near or distant past. But the philosopher does not ask the same questions as the scientist, nor does he employ the same kind of method to answer them.

Since titles and subject-matter names are not likely to help us determine whether a book is philosophical or scientific, how can we tell? There is one criterion that we think always

works, although you may have to read a certain amount of the book before you can apply it. If a theoretical book emphasizes things that lie outside the scope of your normal, routine, daily experience, it is a scientific work. If not, it is philosophical. The distinction may be surprising. Let us illustrate it. (Remember that it applies only to books that are either science or philosophy, not to books that are neither.) Galileo's Two New Sciences requires you to imagine, or to repeat for yourself in a laboratory, certain experiments with inclined planes. Newton's Opticks refers to experiences in dark rooms with prisms, mirrors, and specially controlled rays of light. The special experience to which the author refers may not have been obtained by him in a laboratory. The facts that Darwin reported in The Origin of Species he observed in the course of many years of work in the field. They are facts that can be and have been rechecked by other observers making a similar effort. But they are not facts that can be checked in terms of the ordinary daily experience of the average man. In contrast, a philosophical book appeals to no facts or observations that lie outside the experience of the ordinary man. A philosopher refers the reader to his own normal and common experience for the verification or support of anything the writer has to say. Thus, Locke's Essay Concerning Human Understanding is a philosophical work in psychology, whereas many of Freud's writings are scientific. Locke makes every point in terms of the experience all of us have of our own mental processes. Freud can make many of his points only by reporting what he observed under the clinical conditions of the psychoanalyst's office. William James, another great psychologist, took an interesting middle course. He reports many examples of the special experience that only the careful, trained observer can know about, but he also frequently asks the reader to judge whether what is being said is not true from his own experience. Thus James' Principles of Psychology is both a scientific and a philosophical work, although it is primarily scientific. The distinction proposed here is popularly recognized when we say that science is experimental or depends upon elaborate observational researches, whereas philosophy is merely armchair thinking. The contrast should not be invidious. There are certain problems, some of them very important, that can be solved in an armchair by a man who knows how to think about them in the light of common, human experience. There are other problems that no amount of the best armchair thinking can solve. What is needed to solve them is investigation of some sort— experiments in the laboratory or research in the field —extending experience beyond the normal, everyday routine. Special experience is required. This does not mean that the philosopher is a pure thinker and the scientist merely an observer. Both have to observe and think, but they think about different sorts of observations. And however they may have arrived at the conclusions that they want to

prove, they prove them in different ways, the scientist by pointing to the results of his special experiences, the philosopher by pointing to experiences that are common to all. This difference in method always reveals itself in philosophical and scientific books, and that is how you can tell which sort of book you are reading. If you note the sort of experience that is being referred to as a condition of understanding what is being said, you will know whether the book is scientific or philosophical. It is important to know this because, apart from the different kinds of experiences that they depend on, scientists and philosophers do not think in exactly the same way. Their styles in arguing are different. You must be able to find the terms and propositions—here we are getting a little ahead of ourselves—that constitute these different sorts of argumentation. The same is true of history. Historical statements are different from scientific and philosophical ones. A historian argues differently and interprets facts differently. Furthermore, the typical history book is narrative in form. A narrative is a narrative, whether it be fact or fiction. The historian must write poetically, which means he must obey the rules for telling a good story. Whatever other excellences Locke's Essay on Human Understanding or Newton's Principia may have, neither is a good story. You may object that we are making too much of the classification of books, at least before one has read them. Is it really all that important?

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kinds of knowledge they have to communicate, they proceed to instruct us differently; and, if we are to follow them, we must learn to read each kind in an appropriate manner.

3. Historical Books

“History,” like “poetry,” is a word of many meanings. In order for this chapter to be useful to you, we must come to terms with you about the word—that is, explain how we will be using it.

First of all, there is the difference between history as fact and history as a written record of the facts. We are obviously, here, employing the term in the latter sense, since in our sense of “read” you cannot read facts. But there are many kinds of written record that are called historical. A collection of documents pertaining to a certain event or period could be called a history of it. A transcription of an oral interview with a participant, or a collection of such transcriptions, could similarly be called a history of the event in which he or they participated. A work having quite a different intention, such as a personal diary or collection of letters, could be construed as being a history of the time. The word could be applied, and indeed has been applied, to almost every kind of writing that originated in a time period, or in the context of an event, in which the reader was interested. The sense in which we use the word “history” in what follows is both narrower and broader than any of those. It is narrower because we want to restrict ourselves to essentially narrative accounts, presented in a more or less formal manner, of a period or event or series of events in the past. This is a traditional use of the term, and we do not apologize for it. Again, as with our definition of lyric poetry, we think you will agree with us that this is the ordinary meaning of the term, and we want to stick to the ordinary here. But our meaning is also broader than many of the definitions of the term that are current today. We think, although not all historians agree with us, that the essence of history is narration, that the last five letters of the word—“story”—help us to understand the basic meaning. Even a collection of documents, as a collection, tells a story. That story may not be explicit—that is, the historian may try not to arrange the documents in any “meaningful” order. But it is implicit in them, whether they are ordered or not. Otherwise, we think, the collection would not be called a history of its time. It is not important, however, whether all historians agree with us in our notion of what history is. There is a great deal of history of the kind we are discussing, and you will want to or have to read at least some of it. We will try to aid you in that task.

The Elusiveness of Historical Facts

Probably you have been a member of a jury, listening to the testimony about a simple matter of fact, such as an automobile accident. Or you may have been on a blue ribbon jury, and have had to decide whether one person killed another or not. If you have done either, you know how difficult it is to reconstruct the past, even a single event in the past, from the memories of persons who actually saw it happen. A court concerns itself with events that have happened fairly recently and in the presence of living witnesses. In addition, there are stringent rules of evidence. A witness cannot suppose anything, he cannot guess or hypothecate or estimate (except under very carefully controlled conditions). And of course he is not supposed to lie. With all the careful rules of evidence, and cross-examination besides, have you ever been absolutely sure, as a member of a jury, that you really knew what happened? The law assumes that you will not be absolutely sure. It assumes that there will always be some doubt in a juror's mind. As a matter of practice, in order that trials may be decided one way or the other, it says that the doubt must be "reasonable" if it is to be allowed to affect your judgment. The doubt must be, in other words, sufficient to trouble your conscience. A historian is concerned with events that occurred, most of them, a long time ago. All the witnesses to the events are usually dead. What evidence they give is not given in a courtroom—that is, it is not governed by stringent and careful rules. Such witnesses as there are often guess, hypothecate, estimate, assume, and suppose. We cannot see their faces in order to judge whether they are lying (if we ever really can know that about anybody). They are not cross-examined. And there is no guarantee whatever that they know what they are talking about. If, then, it is difficult to be sure that one knows about the truth of a relatively simple matter, such as is decided by a jury in a court of law, how much more difficult it is to know what really happened in history. A historical fact, though we may have a feeling of trust and solidity about the word, is one of the most elusive things in the world. Of course, about some kinds of historical fact we can be pretty certain. America was involved in a Civil War that began with the firing on Fort Sumter, on April 12, 1861, and ended with the surrender of General Lee to General Grant at Appomattox Court House, on April 9, 1865. Everyone agrees about those dates. It is not likely (though it is not totally impossible) that every American calendar was incorrect at that time. But how much have we learned if we know exactly when the Civil War started and when it ended? Indeed, those dates have been disputed—not on the grounds that the calendars were wrong, but that the war really started with the election of Lincoln in the fall of 1860 and ended with his assassination five days after Lee's surrender. Others have claimed that the war started even earlier—as much as five or ten

or twenty years before 1861—and we know that it was still actually being fought in outlying parts of the United States, to which word had not yet come of the Northern triumph, as late as May, June, and July, 1865. And there are those, too, who feel that the Civil War is not over yet, that it will never be over until black Americans are completely free and equal, or until the South manages to secede from the Union, or until the right of the federal government to control all the states is finally established and accepted by every American everywhere. At least we do know, one might say, that whether or not the firing on Fort Sumter started the Civil War, it did occur on April 12, 1861. That is true—within the limits of possibility we referred to before. But why was Sumter fired on? That is an obvious next question. And could war still have been avoided after the attack? If it had been, would we care that such and such an assault occurred on such and such a spring day more than a century ago? If we did not care—and we do not care about many attacks on forts that have doubtless occurred, but about which we know nothing whatever—would the firing on Sumter still be a significant historical fact?

Theories of History

We class history, the story of the past, more often under fiction than under science— if it must be affiliated with one or the other. If not, if history, that is, is allowed to rest somewhere in between the two main divisions of the kinds of books, then it is usually admitted that history is closer to fiction than to science. This does not mean that a historian makes up his facts, like a poet or story teller. However, we might get into trouble if we insisted too strongly that a writer of fiction makes up his facts. He creates a world, as we have said. But this new world is not totally different from our own—indeed, it had better not be—and a poet is an ordinary man, with ordinary senses by and through which he has learned. He does not see things that we cannot see (he may see better or in a slightly different way). His characters use words that we use (otherwise we could not believe in them). It is only in dreams that human beings create really strange new worlds—yet even in the most fantastic dream the events and creatures of the imagination are made up out of elements of everyday experience. They are merely put together in strange new ways. A good historian does not, of course, make up the past. He considers himself responsibly bound by some concept or criterion of accuracy or facts. Nevertheless, it is important to remember that the historian must always make up something. He must either find a general pattern in, or impose one on, events; or he must suppose that he knows why the persons in his story did the things they did. He may have a general theory or philosophy, such as that Providence rules human affairs, and make his history fit that. Or he may

abjure any such pattern, imposed as it were from the outside or above, and instead insist that he is merely reporting the real events that have occurred. But in that case he is likely to be forced to assign causes for events and motivations for actions. It is essential to recognize which way the historian you are reading is operating. The only way to avoid taking either one or the other position is to assume that men do not do things for a purpose, or that the purpose, if it exists, is undiscoverable —in other words, that there is no pattern to history at all. Tolstoy had such a theory about history. He was not a historian, of course; he was a novelist. But many historians have held the same view, particularly in modern times. The causes of every human action, Tolstoy thought, were so manifold, so complex, and so deeply hidden in unconscious motivations that it is impossible to know why anything ever happened. Because theories of history differ, and because a historian's theory affects his account of events, it is necessary to read more than one account of the history of an event or period if we want to understand it. Indeed, this is the first rule of reading history. And it is all the more important if the event in which we are interested has practical significance for us. It is probably of practical significance to all Americans that they know something about the history of the Civil War. We still live in the backwash of that great and sorry conflict; we live in a world it helped to make. But we cannot hope to understand it if we look at it through the eyes of only one man, or one side, or one faction of modern academic historians. The other day we opened a new Civil War history and noted that its author offered it as "an impartial, objective history of the Civil War from the point of view of the South." The author appeared to be serious. Maybe he was; maybe such a thing is possible. At any rate, we would admit that every narrative history has to be written from some point of view. But to get at the truth, we ought to look at it from more than one viewpoint.

The Universal in History

We are not always able to read more than one history of an event. When we are not, we must admit that we do not have much chance of learning the truth of the matter in question—of learning what really happened. However, that is not the only reason to read history. It might be claimed that only the professional historian, the man who is writing a history himself, is required to cross-examine his sources by exhaustively checking one against the other. He must leave no stone unturned if he is to know what he ought to know about his subject. We, as lay readers of history, stand somewhere between the professional historian, on the one hand, and the irresponsible amateur, on the other hand, who reads history only for amusement. Let us take the example of Thucydides. You may be aware that he wrote the only major contemporary history of the Peloponnesian War at the end of the fifth century B.C. In a sense, there is nothing to check his work against. What, then, can we expect to learn from it? Greece is now a tiny country; a war that occurred there twenty-five centuries ago can have little real effect on our life today. Everyone who fought in it is long dead, and the specific things for which they fought are long dead, too. The victories are now meaningless, and the defeats without pain. The cities that were taken and lost have crumbled into dust. Indeed, if we stop to think of it, almost all that remains of the Peloponnesian War is Thucydides' account of it. Yet that account is still important. For Thucydides' story—we might as well use that word—has had an influence on the subsequent history of man. Leaders in later eras read Thucydides. When they found themselves in situations that even faintly approximated that of the tragically divided Greek city-states, they compared their own position to that of Athens or Sparta. They used Thucydides as an excuse and a justification, and even as a pattern of conduct. The result was that by ever so little, perhaps, but perceptibly, the history of the world was changed by the view held of a small portion of it by Thucydides in the fifth century B.C. Thus we read Thucydides not because he described perfectly what happened before he wrote his book, but because he to a certain extent determined what happened after. And we read him, strange as this may seem, to know what is happening now. "Poetry is more philosophical than history," wrote Aristotle. By this he meant that poetry is more general, more universal. A good poem is true not only in its own time and place, but in all times and places. It has meaning and force for all men. History is not quite so universal as that. It is tied to events in a way that poetry is not. But any good history is also universal. Thucydides himself said that he was writing his history so that men of the future would not have to repeat the mistakes he had seen made and from which he had suffered personally and through the agony of his country. He described the kinds of human mistakes that would have meaning

to men other than himself, to men other than Greeks. Yet some of the very same errors that the Athenians and the Spartans made 2,500 years ago, or at least very similar ones, are being made now, as they have been made over and over again since Thucydides' time. If your view of history is limited, if you go to it to discover only what really happened, you will not learn the main thing that Thucydides, or indeed any good historian, has to teach. If you read Thucydides well, you may even decide to give up trying to discover what really happened in the past.

History is the story of what led up to now. It is the present that interests us—that and the future. The future will be partly determined by the present. Thus, you can learn something about the future, too, from a historian, even from one who like Thucydides lived more than two thousand years ago. Let us sum up these two suggestions for reading history. The first is: if you can, read more than one history of an event or period that interests you. The second is: read a history not only to learn what really happened at a particular time and place in the past, but also to learn the way men act in all times and places, especially now.

4. Biography.

A biography is a story about a real person. This mixed patrimony causes it to have a mixed character.

Some biographers would object to this description. But ordinarily, at least, a biography is a narrative account of the life, the history, of a man or woman or of a group of people; thus, a biography poses many of the same problems as a history. The reader must ask the same sort of questions—what is the author's purpose? What are his criteria of truth?—as well, of course, as asking the questions we must ask of any book.

There are several kinds of biographies. The *definitive* biography is intended to be the final, exhaustive, scholarly work on the life of someone important enough to deserve a definitive biography. Definitive biographies cannot be written about living persons. They are seldom written until several non-definitive biographies have first appeared, all of them often somewhat inadequate. All sources are gone through, all letters read, and a great deal of contemporary history examined by the author. Since the ability to gather the materials is somewhat different from the talent for shaping them into a good book, definitive biographies are not always easy reading. This is too bad. A scholarly book does not have to be dull. One of the greatest of all biographies is Boswell's *Life of Johnson,* and it is continuously fascinating. It is certainly definitive (though other biographies of Dr. Johnson have since appeared), but it is also uniquely interesting.

A definitive biography is a slice of history—the history of a man and of his times, as seen through his eyes. It should be read as history. An *authorised* biography is not the same thing at all. Such works are usually commissioned by the heirs or friends of some important person, and they are carefully written so that the errors the person made and the triumphs he achieved are seen in the best light possible. They can sometimes be very good indeed, because the author has the advantage—not as a rule accorded to other writers—of being allowed access to all pertinent material by those who control it. But, of course, an authorised biography cannot be trusted in the same way that a definitive biography can be. Instead of reading it simply as history, the reader should understand that it may be biased—that this is the way the reader is expected to think of the book's subject; this is the way his friends and associates want him to be known to the world.

The authorised biography is a kind of history, but it is history with a difference. We may be curious to know what interested persons want the public to know about someone's private life, but we should not expect to know what the private life really was. The reading of an authorised biography will thus often tell us much about the time in which it was written, about its customs and manners, about those actions and attitudes that were acceptable—and, by implication and with a little extrapolation, about those that were not. But we should not hope to discover the real life of a human being any more than we would hope to know the real story of a war if we read the communiqués of only one side. To get at the truth we must read all the communiqués, ask people who were there, and use our own minds to make sense out of the muddle. A definitive biography has already done this work; in the case of an authorised biography (and most biographies of living persons are of this sort), there is still much to do.

There remain those biographies that are neither definitive nor authorised. Perhaps we may call them ordinary biographies. In such works, we expect the author to be accurate, to know his facts. We want above all to be given the feeling that we are viewing the life of a real person in another time and place. Human beings are curious, and especially curious about other human beings.

Such books, although not trustworthy in the way definitive biographies are, are often very good reading. The world would be the poorer without Izaak Walton's *Lives* of his friends, the poets John Donne and George Herbert, for example (Walton is of course better known for his *The Compleat Angler*); or John Tyndall's account of his friend Michael Faraday in *Faraday the Discoverer.*

Some biographies are didactic. They have a moral purpose. Not many of this sort are written any more, but they used to be common. (They are still written for children, of course.) Plutarch's *Lives of the Noble Grecians and Romans* is such a work. Plutarch told the stories of great men of the Greek and Roman past in order to help his contemporaries to be great also, and to help them avoid the errors into which the great so often fall—or so he felt. The *Lives* is a marvellous book; but, although many of the accounts are the only ones we have of their subjects, we do not read it so much for its biographical information as for its view of life in general. Its subjects are interesting people, good and bad, but never indifferent. Plutarch realised this himself. His original intention in writing had been to instruct others, he said, but in the course of the work he discovered that more and more it was he himself who was deriving profit and stimulation from "lodging these men one after the other in his house."

Incidentally, Plutarch's is another historical work that has exercised a profound influence on subsequent history. For example, just as Plutarch shows Alexander the Great modelling his own life on that of Achilles (whose life he learned about from Homer), so many later conquerors have tried to model their lives on that of Plutarch's Alexander.

5. Autobiography

Autobiographies present some different and interesting problems. First of all, it is questionable whether anyone has ever written a true autobiography. If it is difficult to know the life of anyone else, it is even more difficult to know one's own. And, of course, all autobiographies have to be written about lives that are not yet complete.

The temptation to tell either less or more than the truth (the latter may be more common), when there is no one to contradict you, is almost irresistible. Everybody has some secrets he cannot bear to divulge; everybody also has some illusions about himself, which it is almost impossible for him to regard as illusions. However, although it is not possible to write a wholly true autobiography, neither is it possible to write one that contains no truth at all. Just as no man can be a perfect liar, so every autobiography tells us something about its author, if only that there are things that he wants to conceal.

It is customary to say that the *Confessions* of Rousseau, or some other book written about the same time (about the middle of the eighteenth century), is the first real autobiography. This is to overlook Augustine's *Confessions,* for example, and Montaigne's *Essays;* but the error is more serious than that. In fact, much of what anyone writes on any subject is autobiographical. There is a great deal of Plato in the *Republic,* of Milton in *Paradise Lost,* of Goethe in *Faust*—though we may not be able to put our finger on it exactly. If we are interested in humanity, we will tend, within reasonable limits, to read any book partly with an eye to discovering the character of its author.

This should never be the primary consideration, and it leads, when it is overdone, to the so-called pathetic fallacy. But we should remember that words do not write themselves —the ones we read have been found and written down by a living man. Plato and Aristotle said some similar, and some dissimilar, things; but even if they had agreed completely, they could not have written the same books, for they were different men. We may even discover something of St. Thomas Aquinas in such an apparently unrevealing work as the *Summa Theologica.*

Thus it matters very little that *formal* autobiography is a relatively new literary genre. No one has ever been able to keep himself entirely out of his book. "I have no more made my book," said Montaigne, "than my book has made me; a book co-substantial with its author, concerned with my own self, an integral part of my life." And he added, "Everyone recognizes me in my book, and my book in me." This is true, and not only of Montaigne. "This is no book," says Whitman of his *Leaves of Grass.* "Who touches this touches a man."

Are there any additional hints for reading biographies and autobiographies? Here is one that is important. Despite the fact that such books, and especially the autobiographies, reveal much about their authors, we should not spend so much time trying to discover a writer's secrets that we do not find out what he says plainly. Apart from this, given the fact that such books are often more poetical than discursive or philosophical, and that they are special kinds of history, there is perhaps little more to add. You should remember, of course, that if you wish to know the truth about a person's life, you should read as many

biographies of him as you can find, including his own account of his life, if he wrote one. Read biography as history and as the cause of history; take all autobiographies with a grain of salt; and never forget that you must not argue with a book until you fully understand what it is saying. As to the question, What of it?, we would only say this: biography, like history, can be a cause of practical, moral action. A biography can be inspiring. It is the story of a life, usually a more or less successful one—and we too have lives to lead.

6. Current Events

We have said that our exposition of the art of analytical reading applies to everything you have to read, not just to books. Now we want to qualify that statement a little. Analytical reading is not always necessary. There are many things that we read that do not require the kind of effort and skill that is called for at this third level of reading ability. Nevertheless, although the rules of reading do not all always have to be applied, the four questions must always be asked of anything you read. That means, of course, that they must be asked when you are faced with the kind of things to which most of us devote much of our reading time: newspapers, magazines, books about current events, and the like.

After all, history did not stop a thousand years ago, or a hundred. The world goes on, and men and women continue to write about what is happening and how things are changing. Perhaps no modern history is as great as Thucydides' work; posterity will have to be the judge of that. But we do have an obligation, as human beings and as citizens, to try to understand the world around us.

The problem comes down to knowing what is actually happening now. We have chosen the word "actually" in the last sentence intentionally. The French word for newsreel is *actualités;* the whole concept of current events literature is somehow the same as that of the "news." How do we get the news, and how do we know that what we get is true?

You can see at once that we are faced with the same problem that is posed by history itself. We cannot be sure that we are getting at the facts—we cannot be sure that we know what is happening now any more than we can be sure about what happened in the past. And yet we must try to know, so far as that is possible.

If we could be everywhere at once, overhear all conversations on earth, look into the heart of every living person, we might be able to make a stab at the truth of current events. Being human and hence limited, we must fall back on the services of reporters. Reporters are persons who are supposed to know what is happening in a small area. They report it in newspaper stories, in magazines, or in books. What we can know depends on them.

Ideally, a reporter, of whatever kind, is a clear glass in which reality is reflected— or through which it shines. But the human mind is not a clear glass. It is not a good reflector, and when reality shines through it, the mind is not a very good filter. It separates out what it considers to be unreality, untruth. That is proper, of course; a reporter should not report what he thinks is false. But he may be mistaken.

Thus the most important thing to know, when reading any report of current happenings, is *who is writing the report.* What is involved here is not so much an acquaintance with the reporter himself as with the *kind* of mind he has. The various sorts of filter-reporters fall into groups. To understand what kind of filter our reporter's mind is, we must ask a series of questions about it. This amounts to asking a series of questions about any material dealing with current events. The questions are these:

1. What does the author want to prove?
2. Whom does he want to convince?
3. What special knowledge does he assume?
4. What special language does he use?
5. Does he really know what he is talking about?

For the most part it is safe to assume that all current events books want to prove something. Often it is easy enough to discover what this is. The blurb often states the main contention or thesis of such books. If it does not appear there, it may be stated by the author in a preface.

Having asked what the book is trying to prove, you should next ask whom the author is trying to convince. Is the book intended for those "in the know"—and are you in that category? Is it for that small group of persons who can do something, and quickly, about the situation the author describes? Or is it for everyone? If you do not belong to the audience for which the book is intended, you may not want to read it.

You must next discover what special knowledge the author assumes that you have. The word "knowledge" is intended here to cover a lot of ground. "Opinion" or "prejudice" might have been a better choice. Many authors write only for readers who agree with them. If you disagree sharply with a reporter's assumptions, you may only be irritated if you try to read his book.

The assumptions that an author makes, and that he assumes you share, are sometimes very difficult to discover. In *The Seventeenth Century Background,* Basil Willey has this to say:

> . . . it is almost insuperably difficult to become critically conscious of one's own habitual assumptions; "doctrines felt as facts" can only be seen to be doctrines, and not facts, after great efforts of thought, and usually only with the aid of a first-rate metaphysician.

He goes on to suggest that it is easier to discover the "doctrines felt as facts" of an age different from our own, and that is what he attempts to do in his book. In reading books about our own time, however, we do not have the advantage of distance. Thus we must try to see through the filter not only of the author-reporter's mind, but also of our own.

Next, you must ask if there is a special language that the author uses. This is particularly important in reading magazines and newspapers, but it also applies to all books about current history. Certain words provoke special responses from us, responses that they might not provoke from other readers a century hence. An example of such a word is "Communism" or "Communist." We should try to control these responses, or at least know when they occur.

Finally, you must consider the last of the five questions, which is probably the hardest to answer. Does the reporter whose work you are reading himself know the facts? Is he privy to the perhaps secret thoughts and decisions of the persons about whom he is writing? Does he know all that he should know in order to give a fair and balanced account of the situation?

What we are suggesting, in other words, is that the possible bias of the author-reporter is not the only thing that has to be considered. We have heard a good deal lately about the "management of the news"; it is important to realize that this applies not only to us, as members of the public, but also to reporters who are supposed to be "in the know." They may not be. With the best good will in the world, with every intention of providing us with the truth of the matter, a reporter may still be "uninformed" with regard to secret actions, treaties, and so forth. He himself may be aware of this, or he may not. In the latter case, of course, the situation is especially perilous for his reader.

You will note that these five questions are really only variations on the questions we have said you must ask of any expository book. Knowing an author's special language, for example, is nothing more than coming to terms with him. But because current books and other material about the contemporary world pose special problems for us as readers, we have stated the questions in a different way.

Perhaps it is most useful to sum up the difference in a warning rather than a set of rules for reading books of this kind. The warning is this: *Caveat lector*—"Let the reader beware." Readers do not have to be wary when reading Aristotle, or Dante, or Shakespeare. But the author of any contemporary book may have—though he does not necessarily have—an interest in your understanding it in a certain way. Or if he does not, the sources of his information may have such an interest. You should know that interest, and take it into account in whatever you read.

A Note on Digests

There is another consequence of our basic distinction—the distinction between reading for information and reading for understanding—that underlies everything we have said about reading. And this is that sometimes we have to read for information about understanding—to find out how others have interpreted the facts. Let us try to explain what this means.

For the most part, we read newspapers and magazines, and even advertising matter, for the information they contain. The amount of such material is vast, so vast that no one today has time to read more than a small fraction of it. Necessity has been the mother of a number of good inventions in the field of such reading. The news magazines, for instance, such as *Time* and *Newsweek,* perform an invaluable function for most of us by *reading* the news and reducing it to its essential elements of information. The men who write these magazines are primarily readers. They have developed the art of reading for information to a point far beyond the average reader's competence.

The same is true of a publication like *Reader's Digest,* which professes to bring us in condensed form much that is worth our attention in current general magazines to the compact scope of a single, small volume. Of course, the very best articles, like the best books, cannot be condensed without loss. If the essays of Montaigne, for example, were appearing in a current periodical, we would scarcely be satisfied to read a digest of them. A summary, in this case, would function well only if it impelled us to read the original. For the average article, however, a condensation is usually adequate, and often even better than the original, because the average article is mainly informational. The skill that produces *Reader's Digest* and the scores of similar periodicals is, first of all, a skill in reading, and only then one of writing simply and clearly. It does for us what few of us have the technique—even if we had the time—to do for ourselves. It cuts the core of solid information out of pages and pages of less substantial stuff.

But, after all, we still have to read the periodicals that accomplish these digests of current news and information. If we wish to be informed, we cannot avoid the task of reading, no matter how good the digests are. And the task of reading them is, in the last analysis, the same task as that which is performed by the editors of these magazines on the original material that they make available in more compact form. They have saved us labor, so far as the extent of our reading is concerned, but they have not saved us and cannot entirely save us the trouble of reading. In a sense, the function they perform profits us only if we can read their digests of information as well as they have done the prior reading in order to give us the digests.

And that involves reading for understanding as well as information. Obviously, the more condensed a digest is, the more selection has occurred. We may not have to worry about this very much if 1,000 pages are cut down to 900, say; but if 1,000 pages are cut to ten, or even one, then the question of what has been left out becomes critical. Hence the greater the condensation, the more important it is that we know something of the character of the condenser; the same *caveat* we mentioned before applies here with even greater force. Ultimately, perhaps, this comes down to reading between the lines of an expert

condensation. You cannot refer to the original to find out what was left out; you must somehow infer this from the condensation itself. Reading digests, therefore, is sometimes the most demanding and difficult reading that you can do.

7. Science and Mathematics

The title of this chapter may be misleading. We do not propose to give you advice about how to read every kind of science and mathematics. We will confine ourselves to discussing only two kinds: the great scientific and mathematical classics of our tradition, on the one hand, and modern scientific popularisation, on the other hand. What we say will often be applicable to the reading of specialised monographs on abstruse and limited subjects, but we cannot help you to read those. There are two reasons for this. One is, simply, that we are not qualified to do it.

The other is this. Until approximately the end of the nineteenth century, the major scientific books were written for a lay audience. Their authors—men like Galileo, and Newton, and Darwin—were not averse to being read by specialists in their fields; indeed, they wanted to reach such readers. But there was as yet no institutionalised specialisation in those days, days which Albert Einstein called “the happy childhood of science.” Intelligent and well-read persons were expected to read scientific books as well as history and philosophy; there were no hard and fast distinctions, no boundaries that could not be crossed. There was also none of the disregard for the general or lay reader that is manifest in contemporary scientific writing. Most modern scientists do not care what lay readers think, and so they do not even try to reach them.

Today, science tends to be written by experts for experts. A serious communication on a scientific subject assumes so much specialised knowledge on the part of the reader that it usually cannot be read at all by anyone not learned in the field. There are obvious advantages to this approach, not least that it serves to advance science more quickly. Experts talking to each other about their expertise can arrive very quickly at the frontiers of it—they can see the problems at once and begin to try to solve them. But the cost is equally obvious. You—the ordinary intelligent reader whom we are addressing in this book—are left quite out of the picture.

In fact, this situation, although it is more extreme in science than elsewhere, obtains in many other fields as well. Nowadays, philosophers seldom write for anyone except other philosophers; economists write for economists; and even historians are beginning to find that the kind of shorthand, monographic communication to other experts that has long been dominant in science is a more convenient way of getting ideas across than the more traditional narrative work written for everyone.

What does the general reader do in these circumstances? He cannot become expert in all fields. He must fall back, therefore, on scientific popularisation. Some of these are good, and some are bad. But it is not only important to know the difference; it is also important to be able to read the good ones with understanding.

Understanding the Scientific Enterprise

One of the fastest growing academic disciplines is the history of science. We have seen marked changes in this area within the past few years. It was not so long ago that "serious" scientists looked down upon historians of science. The latter were thought of as men who studied the history of a subject because they were not capable of expanding its frontiers. The attitude of scientists to historians of science could be summed up in that famous remark of George Bernard Shaw's: "Those who can, do; those who can't, teach."

Expressions of this attitude are seldom heard nowadays. Departments of the history of science have become respectable, and excellent scientists study and write about the history of their subject. An example is what has been called the "Newton industry." At the present time, intensive and extensive research is being undertaken in many countries on the work and strange personality of Sir Isaac Newton. Half a dozen books have been recently published or announced. The reason is that scientists are more concerned than ever before about the nature of the scientific enterprise itself.

Thus we have no hesitation in recommending that you try to read at least some of the great scientific classics of our tradition. In fact, there is really no excuse for not *trying* to read them. None of them is impossibly difficult, not even a book like Newton's *Mathematical Principles of Natural Philosophy,* if you are willing to make the effort.

The most helpful advice we can give you is this. You are required by one of the rules for reading expository works to state, as clearly as you can, the problem that the author has tried to solve. This rule of analytical reading is relevant to all expository works, but *it is particularly relevant to works in the fields of science and mathematics.*

There is another way of saying this. As a layman, you do not read the classical scientific books to become knowledgeable in their subject matters in a contemporary sense. Instead, you read them to understand the history and philosophy of science. That, indeed, is the layman's responsibility with regard to science. The major way in which you can discharge it is to become aware of the problems that the great scientists were trying to solve—aware of the problems, and aware, also, of the background of the problems.

To follow the strands of scientific development, to trace the ways in which facts, assumptions, principles, and proofs are interrelated, is to engage in the activity of the human reason where it has probably operated with the most success. That is enough by itself, perhaps, to justify the historical study of science. In addition, such study will serve to dispel, in some measure, the apparent unintelligibility of science. Most important of all, it is an activity of the mind that is essential to education, the central aim of which has always been recognized, from Socrates' day down to our own, as the freeing of the mind through the discipline of wonder.

Suggestions for Reading Classical Scientific Books

By a scientific book, we mean the report of findings or conclusions in some field of research, whether carried on experimentally in a laboratory or by observations of nature in the raw. The scientific problem is always to describe the phenomena as accurately as possible, and to trace the interconnections between different kinds of phenomena.

In the great works of science, there is no oratory or propaganda, though there may be bias in the sense of initial presuppositions. You detect this, and take account of it, by distinguishing what the author *assumes* from what he *establishes* through argument. The more "objective" a scientific author is, the more he will explicitly ask you to take this or that for granted. Scientific objectivity is not the *absence of initial bias.* It is attained by *frank confession of it.*

The leading terms in a scientific work are usually expressed by uncommon or technical words. They are relatively easy to spot, and through them you can readily grasp the propositions. The main propositions are always general ones. Science thus is not chronotopic. Just the opposite; a scientist, unlike a historian, tries to get away from locality in time and place. He tries to say how things are generally, how things generally behave.

There are likely to be two main difficulties in reading a scientific book. One is with respect to the arguments. Science is primarily inductive; that is, its primary arguments are those that establish a general proposition by reference to observable evidence—a single case created by an experiment, or a vast array of cases collected by patient investigation. There are other arguments, of the sort that are called deductive. These are arguments in which a proposition is proved by other propositions already somehow established. So far as proof is concerned, science does not differ much from philosophy. But the inductive argument is characteristic of science.

This first difficulty arises because, in order to understand the inductive arguments in a scientific book, you must be able to follow the evidence that the scientist reports as their basis. Unfortunately, this is not always possible with nothing but the book in hand. If the book itself fails to enlighten him, the reader has only one recourse, which is to get the necessary special experience for himself at first hand. He may have to witness a laboratory demonstration. He may have to look at and handle pieces of apparatus similar to those referred to in the book. He may have to go to a museum and observe specimens or models.

Anyone who desires to acquire an understanding of the history of science must not only read the classical texts, but must also become acquainted, through direct experience, with the crucial experiments in that history. There are classical experiments as well as classical books. The scientific classics become more intelligible to those who have seen with their own eyes and done with their own hands what a great scientist describes as the procedure by which he reached his insights.

This does not mean that you cannot make a start without going through all the steps described. Take a book like Lavoisier's *Elements of Chemistry,* for instance. Published in

1789, the work is no longer considered to be useful as a textbook in chemistry, and indeed a student would be unwise to study it for the purpose of passing even a high school examination in the subject. Nevertheless, its method was revolutionary at the time, and its conception of a chemical element is still, on the whole, the one that we have in modern times. Now the point is that you do not have to read the book through, and in detail, to receive these impressions of it. The Preface, for example, with its emphasis on the importance of method in science, is enlightening. “Every branch of physical science,” wrote Lavoisier, must consist of three things: the series of facts which are the objects of the science, the ideas which represent these facts, and the words by which these facts are expressed. . . . And, as ideas are preserved and communicated by means of words, it necessarily follows that we cannot improve the language of any science without at the same time improving the science itself; neither can we, on the other hand, improve a science without improving the language or nomenclature which belongs to it.

This was exactly what Lavoisier did. He improved chemistry by improving its language, just as Newton, a century before, had improved physics by systematizing and ordering *its* language—in the process, as you may recall, developing the differential and integral calculus.

Mention of the calculus leads us to consider the second main difficulty in reading scientific books. And that is the problem of mathematics.

Facing the Problem of Mathematics

Many people are frightened of mathematics and think they cannot read it at all. No one is quite sure why this is so. Some psychologists think there is such a thing as “symbol blindness”—the inability to set aside one’s dependence on the concrete and to follow the controlled shifting of symbols. There may be something to this, except, of course, that words shift, too, and their shifts, being more or less uncontrolled, are perhaps even more difficult to follow. Others believe that the trouble lies in the teaching of mathematics. If so, we can be gratified that much recent research has been devoted to the question of how to teach it better.

The problem is partly this. We are not told, or not told early enough so that it sinks in, that mathematics is a language, and that we can learn it like any other, including our own. We have to learn our own language twice, first when we learn to speak it, second when we learn to read it. Fortunately, mathematics has to be learned only once, since it is almost wholly a written language.

As we have already observed, learning a new written language always involves us in problems of elementary reading. When we underwent our initial reading instruction in elementary school, our problem was to learn to recognize certain arbitrary symbols when they appeared on a page, and to memorize certain relations among these symbols. Even the best readers continue to read, at least occasionally, at the elementary level: for example, whenever we come upon a word that we do not know and have to look up in the dictionary. If we are puzzled by the syntax of a sentence, we are also working at the

elementary level. Only when we have solved these problems can we go on to read at higher levels.

Since mathematics is a language, it has its own vocabulary, grammar, and syntax, and these have to be learned by the beginning reader. Certain symbols and relationships between symbols have to be memorized. The problem is different, because the language is different, but it is no more difficult, *theoretically,* than learning to read English or French or German. At the elementary level, in fact, it may even be easier.

Any language is a medium of communication among men on subjects that the communicants can mutually comprehend. The subjects of ordinary discourse are mainly emotional facts and relations. Such subjects are not *entirely* comprehensible by any two different persons. But two different persons *can* comprehend a third thing that is outside of and emotionally separated from both of them, such as an electrical circuit, an isosceles triangle, or a syllogism. It is mainly when we invest these things with emotional connotations that we have trouble understanding them. Mathematics allows us to avoid this. There are no emotional connotations of mathematical terms, propositions, and equations when these are properly used.

We are also not told, at least not early enough, how beautiful and how intellectually satisfying mathematics can be. It is probably not too late for anyone to see this if he will go to a little trouble. You might start with Euclid, whose *Elements of Geometry* is one of the most lucid and beautiful works of any kind that has ever been written.

Let us consider, for example, the first five propositions in Book I of the *Elements.* (If a copy of the book is available, you should look at it.) Propositions in elementary geometry are of two kinds: (1) the statement of problems in the construction of figures, and (2) theorems about the relations between figures or their parts. Construction problems require that something be done, theorems require that something be proved. At the end of a Euclidean construction problem, you will find the letters Q.E.F., which stand for *Quod erat faciendum,* "(Being) what it was required to do." At the end of a Euclidean theorem, you will find the letters Q.E.D., which stand for *Quod erat demonstrandum,* "(Being) what it was required to prove."

The first three propositions in Book I of the *Elements* are all problems of construction. Why is this? One answer is that the constructions are needed in the proofs of the theorems. This is not apparent in the first four propositions, but we can see it in the fifth proposition, which is a theorem. It states that in an isosceles triangle (a triangle with two equal sides) the base angles are equal. This involves the use of Proposition 3, for a shorter line is cut off from a longer line. Since Proposition 3, in turn, depends on the use of the construction in Proposition 2, while Proposition 2 involves Proposition 1, we see that these three constructions are needed for the sake of Proposition 5.

Constructions can also be interpreted as serving another purpose. They bear an obvious similarity to postulates; both constructions and postulates assert that geometrical operations can be performed. In the case of the postulates, the possibility is *assumed;* in the case of the propositions, it is *proved.* The proof, of course, involves the use of the

postulates. Thus, we might wonder, for example, whether there is really any such thing as an equilateral triangle, which is defined in Definition 20. Without troubling ourselves here about the thorny question of the existence of mathematical objects, we can at least see that Proposition 1 shows that, from the *assumption* that there are such things as straight lines and circles, it *follows* that there are such things as equilateral triangles.

Let us return to Proposition 5, the theorem about the equality of the base angles of an isosceles triangle. When the conclusion has been reached, in a series of steps involving reference to previous propositions and to the postulates, the proposition has been proved. It has then been shown that *if something is true* (namely, the hypothesis that we have an isosceles triangle), and if some additional things are valid (the definitions, postulates, and prior propositions), *then something else is also true,* namely, the conclusion. The proposition asserts this *if-then* relationship. It does not assert the truth of the hypothesis, nor does it assert the truth of the conclusion, except when the hypothesis is true. Nor is this connection between hypothesis and conclusion seen to be true until the proposition is proved. It is precisely the truth of this connection that is proved, and nothing else.

Is it an exaggeration to say that this is beautiful? We do not think so. What we have here is a *really logical exposition* of a *really limited problem.* There is something very attractive about both the clarity of the exposition and the limited nature of the problem. Ordinary discourse, even very good philosophical discourse, finds it difficult to limit its problems in this way. And the use of logic in the case of philosophical problems is hardly ever as clear as this.

Consider the difference between the argument of Proposition 5, as outlined here, and even the simplest of syllogisms, such as the following:

> All animals are mortal;
> All men are animals;
> Therefore, all men are mortal.

There is something satisfying about that, too. We can treat it as though it were a piece of mathematical reasoning. Assuming that there are such things as animals and men, and that animals are mortal, then the conclusion follows with the same certainty as the one about the angles of the triangle. But the trouble is that there really are animals and men; we are assuming something about real things, something that may or may not be true. We have to examine our assumptions in a way that we do not have to do in mathematics. Euclid's proposition does not suffer from this. It does not really matter to him whether there are such things as isosceles triangles. *If* there are, he is saying, and *if* they are defined in such and such a way, *then* it follows absolutely that their base angles are equal. There can be no doubt about this whatever—now and forever.

Handling the Mathematics in Scientific Books

This digression on Euclid has led us a little out of our way. We were observing that the presence of mathematics in scientific books is one of the main obstacles to reading them. There are a couple of things to say about that.

First, you can probably read at least elementary mathematics better than you think. We have already suggested that you should begin with Euclid, and we are confident that if you spent several evenings with the *Elements* you would overcome much of your fear of the subject. Having done some work on Euclid, you might proceed to glance at the works of other classical Greek mathematicians— Archimedes, Apollonius, Nicomachus. They are not really very difficult, and besides, you can skip.

That leads to the second point we want to make. If your intention is to read *a mathematical book in and for itself,* you must read it, of course, from beginning to end—and with a pencil in your hand, for writing in the margins and even on a scratch pad is more necessary here than in the case of any other kinds of books. But your intention may not be that, but instead to read *a scientific work that has mathematics in it.* In this case, skipping is often the better part of valor.

Take Newton's *Principia* for an example. The book contains many propositions, both construction problems and theorems, but it is not necessary to read all of them in detail, especially the first time through. Read the statement of the proposition, and glance down the proof to get an idea of how it is done; read the statements of the so-called lemmas and corollaries; and read the so-called scholiums, which are essentially discussions of the relations between propositions and of their relations to the work as a whole. You will begin to see that whole if you do this, and so to discover how the system that Newton is constructing is built—what comes first and what second, and how the parts fit together. Go through the whole work in this way, avoiding the diagrams if they trouble you (as they do many readers), merely glancing at much of the interstitial matter, but being sure to find and read the passages where Newton is making his main points. One of these comes at the very end of the work, at the close of Book III, which is titled "The System of the World." This *General Scholium,* as Newton called it, not only sums up what has gone before but also states the great problem of almost all subsequent physics.

Newton's *Optics* is another scientific classic that you might want to try to read. There is actually very little mathematics in it, although at first glance that does not appear to be so because the pages are sprinkled with diagrams. But these diagrams are merely illustrations describing Newton's experiments with holes for the sun to shine through into a dark room, with prisms to intercept the sunbeam, and with pieces of white paper placed so that the various colors of the beam can shine on them. You can quite easily repeat some of these experiments yourself, and this is fun to do, for the colors are beautiful, and the descriptions are eminently clear. You will want to read, in addition to the descriptions of the experiments, the statements of the various theorems or propositions, and the discussions that occur at the end of each of the three Books, where Newton sums up his discoveries

and suggests their consequences. The end of Book III is famous, for it contains some statements by Newton about the scientific enterprise itself that are well worth reading.

Mathematics is very often employed by scientific writers, mainly because it has the qualities of preciseness, clarity, and limitedness that we have described. Usually you can understand something of the matter without going very deeply into the mathematics, as in the case of Newton. Oddly enough, however, even if mathematics is absolutely terrifying to you, its absence from certain works may cause you even more trouble. A case in point is Galileo's *Two New Sciences,* his famous treatise on the strength of materials and on motion. This work is particularly difficult for modern readers because it is *not* primarily mathematical; instead, it is presented in the form of a dialogue. The dialogue form, though appropriate to the stage and useful in philosophy when employed by such a master as Plato, is not really appropriate to science. It is therefore hard to discover what Galileo is saying, although when you do you will discover that he is stating some revolutionary things.

Not all of the scientific classics, of course, employ mathematics or even need to employ it. The works of Hippocrates, the founder of Greek medicine, are not mathematical. You might well read them to discover Hippocrates' view of medicine —namely, that it is the art of keeping people well, rather than that of curing them when they are sick. That is unfortunately an uncommon idea nowadays. Nor is William Harvey's discourse on the circulation of the blood mathematical, or William Gilbert's book on magnets. They can be read without too much difficulty if you always keep in mind that your primary obligation is *not to become competent in the subject matter but instead to understand the problem.*

A Note on Popular Science

In a sense, there is little more to say about reading scientific popularisation. By definition, these are works—either books or articles—written for a wide audience, not just for specialists. Thus, if you have managed to read some of the classics of the scientific tradition, you should not have much trouble with them. This is because, although they are about science, they generally skirt or avoid the two main problems that confront the reader of an original contribution in science. First, *they contain relatively few descriptions of experiments* (instead, they merely report the results of experiments). Second, *they contain relatively little mathematics* (unless they are popular books about mathematics itself).

Popular scientific articles are usually easier to read than popular scientific books, although not always. Sometimes such articles are very good—for example, articles found in *Scientific American,* a monthly magazine, or *Science,* a somewhat more technical weekly publication. Of course, these publications, no matter how good they are or how carefully and responsibly edited, pose the problem that was discussed at the end of the last chapter. In reading them, we are at the mercy of reporters who filter the information for us. If they are good reporters, we are fortunate. If they are not, we have almost no recourse.

Scientific popularisation are never easy reading in the sense that a story is or seems to be. Even a three-page article on DNA containing no reports of experiments and no diagrams or mathematical formulas demands considerable effort on the part of the reader. You cannot read it for understanding without keeping your mind awake. Thus, the requirement that you read actively is more important here than almost anywhere else. Identify the subject matter. Discover the relation between the whole and its parts. Come to terms and plot the propositions and arguments. Work at achieving understanding before you begin to criticize or to assess significance.
These rules, by now, are all familiar. But they apply here with particular force.

Short articles are usually primarily informational, and as such they require less active thinking on your part. You must make an effort to understand, to follow the account provided by the author, but you often do not have to go beyond that. In the case of such excellent popular books as Whitehead's *Introduction to Mathematics,* Lincoln Barnett's *The Universe and Dr. Einstein,* and Barry Commoner's *The Closing Circle,* something more is required. This is particularly true of a book like Commoner's, on a subject—the environmental crisis—of special interest and importance to all of us today. The writing is compact and requires constant attention. But the book as a whole has implications that the careful reader will not miss. Although it is not a practical work, in the sense described above in Chapter 13, its theoretical conclusions have important consequences. The mere mention of the book's subject matter—the environmental crisis—suggests this. The environment in question is our own; if it is undergoing a crisis of some sort, then it inevitably follows, even if the author had not said so—though in fact he has—that we are also involved in the crisis. The thing to do in a crisis is (usually) to act in a certain way, or to stop acting in a certain way. Thus Commoner's book, though essentially theoretical, has a significance that goes beyond the theoretical and into the realm of the practical.

This is not to suggest that Commoner's work is important and the books by Whitehead and Barnett unimportant. When *The Universe and Dr. Einstein* was written, as a theoretical account (written for a popular audience) of the history of researches into the atom, people were widely aware of the perils inherent in atomic physics, as represented mainly but not exclusively by the recently discovered atomic bomb. Thus that theoretical book also had practical consequences. But even if people are today not so worried about the imminence of an atomic or nuclear war, there is still what may be called a practical necessity to read this theoretical book, or one like it. The reason is that atomic and nuclear physics is one of the great achievements of our age. It promises great things for man, at the same time that it poses great perils. An informed and concerned reader should know everything he can about the subject.

A slightly different urgency is exerted by Whitehead's *Introduction to Mathematics.* Mathematics is one of the major modern mysteries. Perhaps it is the leading one, occupying a place in our society similar to the religious mysteries of another age. If we want to know something about what our age is all about, we should have some understanding of what mathematics is, and of how the mathematician operates and thinks. Whitehead's book, although it does not go very deeply into the more abstruse branches of the subject, is remarkably eloquent about the principles of mathematical reasoning. If it does nothing else, it shows the attentive reader that the mathematician is an ordinary man, not a magician. And that discovery, too, is important for any reader who desires to expand his horizons beyond the immediate here and now of thought and experience.

8. Philosophy

Children ask magnificent questions. “Why are people?” “What makes the cat tick?” “What’s the world’s first name?” “Did God have a reason for creating the earth?” Out of the mouths of babes comes, if not wisdom, at least the search for it. Philosophy, according to Aristotle, begins in wonder. It certainly begins in childhood, even if for most of us it stops there, too.

The child is a natural questioner. It is not the number of questions he asks but their character that distinguishes him from the adult. Adults do not lose the curiosity that seems to be a native human trait, but their curiosity deteriorates in quality. They want to know whether something is so, not why. But children’s questions are not limited to the sort that can be answered by an encyclopaedia.

What happens between the nursery and college to turn the flow of questions off, or, rather, to turn it into the duller channels of adult curiosity about matters of fact? A mind not agitated by good questions cannot appreciate the significance of even the best answers. It is easy enough to learn the answers. But to develop actively inquisitive minds, alive with real questions, profound questions—that is another story.

Why should we have to try to develop such minds, when children are born with them? Somewhere along the line, adults must fail somehow to sustain the infant’s curiosity at its original depth. School itself, perhaps, dulls the mind—by the dead weight of rote learning, much of which may be necessary. The failure is probably even more the parents’ fault. We so often tell a child there is no answer, even when one is available, or demand that he ask no more questions. We thinly conceal our irritation when baffled by the apparently unanswerable query. All this discourages the child. He may get the impression that it is impolite to be too inquisitive. Human inquisitiveness is never killed; but it is soon debased to the sort of questions asked by most college students, who, like the adults they are soon to become, ask only for information.

We have no solution for this problem; we are certainly not so brash as to think we can tell you how to answer the profound and wondrous questions that children put. But we do want you to recognize that one of the most remarkable things about the great philosophical books is that they ask the same sort of profound questions that children ask. The ability to retain the child’s view of the world, with at the same time a mature understanding of what it means to retain it, is extremely rare—and a person who has these qualities is likely to be able to contribute something really important to our thinking.

We are not required to think as children in order to understand existence. Children certainly do not, and cannot, understand it—if, indeed, anyone can. But we must be able to see as children see, to wonder as they wonder, to ask as they ask. The complexities of adult life get in the way of the truth. The great philosophers have always been able to clear away the complexities and see simple distinctions— simple once they are stated, vastly difficult before. If we are to follow them we too must be childishly simple in our questions—and maturely wise in our replies.

Modern Philosophy and the Great Tradition

For the sake of brevity in what follows, let us call questions about what is and happens in the world, or about what men ought to do or seek, “first-order questions.” We should recognise, then, that there are also “second-order questions” that can be asked: questions about our first-order knowledge, questions about the content of our thinking when we try to answer first-order questions, questions about the ways in which we express such thoughts in language.

This distinction between first-order and second-order questions is useful, because it helps to explain what has happened to philosophy in recent years. The majority of professional philosophers at the present day no longer believe that first-order questions can be answered by philosophers. Most professional philosophers today devote their attention exclusively to second-order questions, very often to questions having to do with the language in which thought is expressed.

That is all to the good, for it is never harmful to be critical. The trouble is the wholesale giving up of first-order philosophical questions, which are the ones that are most likely to interest lay readers. In fact, philosophy today, like contemporary science or mathematics, is no longer being written for lay readers. Second-order questions are, almost by definition, ones of narrow appeal; and professional philosophers, like scientists, are not interested in the views of anyone but other experts.

This makes modern philosophy very hard to read for non-philosophers—as difficult, indeed, as science for non-scientists. We cannot in this book give you any advice about how to read modern philosophy as long as it is concerned exclusively with second-order questions. However, there are philosophical books that you can read, and that we believe you should read. These books ask the kinds of questions that we have called first-order ones. It is not accidental that they were also written primarily for a lay audience rather than exclusively for other philosophers.

Up to about 1930, or perhaps even a little later, philosophical books were written for the general reader. Philosophers hoped to be read by their peers, but they also wanted to be read by ordinary, intelligent men and women. Since the questions that they asked and tried to answer were of concern to everyone, they thought that everyone should know what they thought.

All of the great classical works in philosophy, from Plato onward, were written from this point of view. These books are accessible to the lay reader; you can succeed in reading them if you wish to. Everything that we have to say in this chapter is intended to help you do that.

On Philosophical Method

It is important to understand what philosophical method consists in—at least insofar as philosophy is conceived as asking and trying to answer *first-order questions.* Suppose that you are a philosopher who is troubled by one of the childishly simple questions we have mentioned—the question, for instance, about the properties of everything that exists, or the question about the nature and causes of change. How do you proceed?

If your question were scientific, you would know that to answer it you would have to perform some kind of special research, either by way of developing an experiment to test your answer, or by way of observing a wide range of phenomena. If your question were historical, you would know that you would also have to perform research, although of a different kind. But there is no experiment that will tell you what all existing things have in common, precisely in respect to having existence. There are no special kinds of phenomena that you can observe, no documents that you can seek out and read, in order to find out what change is or why things change. All you can do is reflect upon the question. There is, in short, nothing to do but think.

You are not thinking in a total vacuum, of course. Philosophy, when it is good, is not "pure" speculation—thinking divorced from experience. Ideas cannot be put together just any way. There are stringent tests of the validity of answers to philosophical questions. But such tests are based on common experience alone—on the experience that you already have because you are a human being, not a philosopher. You are as well acquainted through common experience with the phenomena of change as anybody else; everything in the world about you manifests mutability. As far as the mere experience of change goes, you are in as good a position to think about its nature and causes as the greatest philosophers. What distinguishes them is that they thought about it extremely well: they formulated the most penetrating questions that could be asked about it, and they undertook to develop carefully and clearly worked-out answers. By what means? Not by investigation. Not by having or trying to get more experience than the rest of us have. Rather, by thinking more profoundly about the experience than the rest of us have.

Understanding this is not enough. We must also realize that not all of the questions that philosophers have asked and tried to answer are truly philosophical. They themselves were not always aware of this, and their ignorance or mistake in this crucial respect can cause unperceptive readers considerable difficulty. To avoid such difficulties, it is necessary to be able to distinguish the truly philosophical questions from the other questions that a philosopher may deal with, but that he should have waived and left for later scientific investigation to answer. The philosopher was misled by failing to see that such questions can be answered by scientific investigation, though he probably could not have known this at the time of his writing.

An example of this is the question that ancient philosophers asked about the difference between the matter of terrestrial and celestial bodies. To their observation, unaided by telescopes, it appeared to be the case that the heavenly bodies changed only in place; they did not appear to come into being or to pass away, like plants and animals;

nor did they appear to change in size or quality. Because celestial bodies were subject to one kind of change only—local motion— whereas all terrestrial bodies change in other respects as well, the ancients concluded that they had to be composed of a different kind of matter. They did not surmise, nor could they probably have surmised, that with the invention of the telescope, the heavenly bodies would give us knowledge of their mutability beyond anything we can know through common experience. Hence they took as a question that they thought it proper for philosophers to answer one that should have been reserved for later scientific investigation. Such investigation began with Galileo's use of the telescope and his discovery of the moons of Jupiter; this led to the revolutionary assertion by Kepler that the matter of the heavenly bodies is exactly the same as the matter of bodies on earth; and this in turn laid the groundwork for Newton's formulation of a celestial mechanics in which the same laws of motion apply without qualification to all bodies wherever they are in the physical universe.

On the whole, apart from the confusions that may result, the misinformation or lack of information about scientific matters that mars the work of the classical philosophers is irrelevant. The reason is that it is philosophical questions, not scientific or historical ones, that we are interested in when we read a philosophical work. And, at the risk of repeating ourselves, we must emphasise that there is no other way than thinking to answer such questions. If we could build a telescope or microscope to examine the properties of existence, we should do so, of course. But no such instruments are possible.

We do not want to give the impression that it is only philosophers who make mistakes of the sort we are discussing here. Suppose a scientist becomes troubled by

the question about the kind of life a man ought to lead. This is a question in normative philosophy, and the only way to answer it is by thinking about it. But the scientist may not realize that, and instead suppose that some kind of experiment or research will give him an answer. He may decide to ask 1,000 persons what kind of life they would like to lead, and base his answer to the question on their answers. But it should be obvious that his answer, in that case, would be as irrelevant as Aristotle's speculations about the matter of the celestial bodies.

On Philosophical Styles

Although there is only one philosophical method, there are at least five styles of exposition that have been employed by the great philosophers of the Western tradition. The student or reader of philosophy should be able to distinguish between them and know the advantages and disadvantages of each.

1. **THE PHILOSOPHICAL DIALOGUE: The first philosophical style of exposition, first in time if not in effectiveness, is the one adopted by Plato in his *Dialogues.* The style is conversational, even colloquial; a number of men discuss a subject with Socrates (or, in the later dialogues, with a speaker known as The Athenian Stranger); often, after a certain amount of fumbling, Socrates embarks on a series of questions and comments that help to elucidate the subject. In the hands of a master like Plato, this style is heuristic, that is, it allows the reader, indeed leads him, to discover things for himself. When the style is enriched by the high drama—some would say the high comedy—of the story of Socrates, it becomes enormously powerful.**

   "A master like Plato," we said—but there is no one "like" Plato. Other philosophers have attempted dialogues—for example, Cicero and Berkeley—but with little success. Their dialogues are flat, dull, almost unreadable. It is a measure of the greatness of Plato that he was able to write philosophical dialogues that, for wit, charm, and profundity are the equal of any books ever produced by anyone, on any subject. Yet it may be a sign of the inappropriateness of this style of philosophizing that no one except Plato has ever been able to handle it effectively.

   That Plato did so, goes without saying. All Western philosophy, Whitehead once remarked, is but "a footnote to Plato"; and the later Greeks themselves had a saying: "Everywhere I go in my head, I meet Plato coming back." Those statements, however, should not be misunderstood. Plato himself had apparently no philosophical system, no doctrine—unless it was that there is no doctrine, that we should simply keep talking. And asking questions. For Plato, and Socrates before him, did indeed manage to raise most of the important questions that subsequent philosophers have felt it necessary to deal with.

2. **THE PHILOSOPHICAL TREATISE OR ESSAY: Aristotle was Plato's best pupil; he studied under him for twenty years. He is said to have also written dialogues, but none of these survives entirely. What does survive are curiously difficult essays or treatises on a number of different subjects. Aristotle was obviously a clear thinker, but the difficulty of the surviving works has led scholars to suggest that they were originally notes for lectures or books—either Aristotle's own notes, or notes taken down by a student who heard the master speak. We may never know the truth of the matter, but in any event the Aristotelean treatise was a new style in philosophy.**

The subjects covered by Aristotle in his treatises, and the various styles adopted by him in presenting his findings, also helped to establish the branches and approaches of philosophy in the succeeding centuries. There are, first of all, the so-called popular works—mostly dialogues, of which only fragments have come down to us. Then there are the documentary collections. The major one that we know about was a collection of 158 separate constitutions of Greek states. Only one of these survives, the constitution of Athens, which was recovered from a papyrus in 1890. Finally, there are the major treatises, some of which, like the *Physics* and *Metaphysics,* or the *Ethics, Politics,* and *Poetics,* are purely philosophical works, theoretical or normative; some of which, like the book *On the Soul,* are mixtures of philosophical theory and early scientific investigation; and some of which, like the biological treatises, are mainly scientific works in the field of natural history.

Immanuel Kant, although he was probably more influenced by Plato in a philosophical sense, adopted Aristotle's style of exposition. His treatises are finished works of art, unlike Aristotle's in this respect. They state the main problem first, go through the subject matter in a thorough and business-like way, and treat special problems by the way or at the last. The clarity of both Kant and Aristotle may be said to consist in the order that they impose on a subject. We see a philosophical beginning, middle, and end. We also, particularly in the case of Aristotle, are provided with accounts of the views and objections of others, both philosophers and ordinary men. Thus, in one sense the style of the treatise is similar to the style of the dialogue. But the element of drama is missing from the Kantian or Aristotelean treatise; a philosophical view is developed through straightforward exposition rather than through the conflict of positions and opinions, as in Plato.

3. **THE MEETING OF OBJECTIONS: The philosophical style developed in the Middle Ages and perfected by St. Thomas Aquinas in his *Summa Theologica* has likenesses to both of those already discussed. Plato, we have pointed out, raises most of the persistent philosophical problems; and Socrates, as we might have observed, asks in the course of the dialogues the kind of simple but profound questions that children ask. And Aristotle, as we have also pointed out, recognizes the objections of other philosophers and replies to them.**

Aquinas' style is a combination of question-raising and objection-meeting. The *Summa* is divided into parts, treatises, questions, and articles. The form of all the articles is the same. A question is posed; the opposite (wrong) answer to it is given; arguments are educed in support of that wrong answer; these are countered first by an authoritative text (often a quotation from Scripture); and finally, Aquinas introduces his own answer or solution

with the words "I answer that." Having given his own view of the matter, he then replies to each of the arguments for the wrong answer.

The neatness and order of this style are appealing to men with orderly minds, but that is not the most important feature of the Thomistic way of philosophizing. Rather, it is Aquinas' explicit recognition of conflicts, his reporting of different views, and his attempt to meet all possible objections to his own solutions. The idea that the truth somehow evolves out of opposition and conflict was a common medieval one. Philosophers in Aquinas' time accepted as a matter of course that they should be prepared to defend their views in open, public disputes, which were often attended by crowds of students and other interested persons. The civilization of the Middle Ages was essentially oral, partly because books were few and hard to come by. A proposition was not accepted as true unless it could meet the test of open discussion; the philosopher was not a solitary thinker, but instead faced his opponents in the intellectual market place (as Socrates might have said). Thus, the *Summa Theologica* is imbued with the spirit of debate and discussion.

4. **THE SYSTEMIZATION OF PHILOSOPHY: In the seventeenth century, a fourth style of philosophical exposition was developed by two notable philosophers, Descartes and Spinoza. Fascinated by the promised success of mathematics in organizing man's knowledge of nature, they attempted to organize philosophy itself in a way akin to the organization of mathematics.**

Descartes was a great mathematician and, although perhaps wrong on some points, a redoubtable philosopher. What he tried to do, essentially, was to clothe philosophy in mathematical dress—to give it the certainty and formal structure that Euclid, two thousand years before, had given geometry. Descartes was not wholly unsuccessful in this, and his demand for clarity and distinctness in thinking was to some extent justified in the chaotic intellectual climate of his time. He also wrote philosophical treatises in a more or less traditional form, including a set of replies to objections to his views.

Spinoza carried the conception even farther. His *Ethics* is written in strict mathematical form, with propositions, proofs, corollaries, lemmas, scholiums, and the like. However, the subject matter of metaphysics and of morals is not very satisfactorily handled in this manner, which is more appropriate for geometry and other mathematical subjects than for philosophical ones. A sign of this is that when reading Spinoza you can skip a great deal, in exactly the same way that you can skip in Newton. You cannot skip anything in Kant or Aristotle, because the line of reasoning is continuous; and you cannot skip anything in Plato, any more than you would skip a part of a play or poem.

Probably there are no absolute rules of rhetoric. Nevertheless, it is questionable whether it is possible to write a satisfactory philosophical work in mathematical form, as Spinoza tried to do, or a satisfactory scientific work

in dialogue form, as Galileo tried to do. The fact is that both of these men failed to some extent to communicate what they wished to communicate, and it seems likely that the form they chose was a major reason for the failure.

5. **THE APHORISTIC STYLE: There is one other style of philosophical exposition that deserves mention, although it is probably not as important as the other four. This is the aphoristic style adopted by Nietzsche in such works as *Thus Spake Zarathustra* and by certain modern French philosophers. The popularity of this style during the past century is perhaps owing to the great interest, among Western readers, in the wisdom books of the East, which are written in an aphoristic style. This style may also owe something to the example of Pascal's *Pensées.* But of course Pascal did not intend to leave his great work in the form of short, enigmatic statements; he died before he could finish writing out the book in essay form.**

   The great advantage of the aphoristic form in philosophy is that it is heuristic; the reader has the impression that more is being said than is actually said, for he does much of the work of thinking—of making connections between statements and of constructing arguments for positions—himself. At the same time, however, this is the great disadvantage of the style, which is really not expositional at all. The author is like a hit-and-run driver; he touches on a subject, he suggests a truth or insight about it, and then runs off to another subject without properly defending what he has said. Thus, although the aphoristic style is enjoyable for those who are poetically inclined, it is irritating for serious philosophers who would rather try to follow and criticize an author's line of thought.

   As far as we know, there is no other important style of philosophical exposition that has been employed in our Western tradition. (A work like Lucretius' *On the Nature of Things* is not an exception. It was originally in verse; but as far as its style goes, it is no different from other philosophical essays; and in any event we ordinarily read it nowadays in prose translations.) This means that all of the great philosophers have employed one or the other of these five styles; sometimes, of course, a philosopher tries more than one. The treatise or essay is probably the most common form, both in the past and in the present. It can range all the way from highly formal and difficult works like those of Kant, to popular philosophical essays or letters. Dialogues are notoriously hard to write, and the geometrical style is enormously difficult both to write and to read. The aphoristic style is highly unsatisfactory from a philosophical point of view. The Thomistic style has not been used very much in recent times. Perhaps it would not be acceptable to modern readers, but that seems a shame, considering all its advantages.

Hints for Reading Philosophy

It is perhaps clear from the discussion so far that the most important thing to discover in reading any philosophical work is the question or questions it tries to answer. The questions may be stated explicitly, or they may be implicit to a certain extent. In either case, you must try to find out what they are.

How the author answers these questions will be deeply affected by his controlling principles. These may be stated, too, but that is not always the case. We have already quoted Basil Willey on the difficulty—and the importance—of discovering the hidden and unstated assumptions of an author, to say nothing of our own. This goes for any book. It applies to works in philosophy with particular force.

The great philosophers cannot be charged with having tried to hide their assumptions dishonestly, or with having been unclear in their definitions and postulations. It is precisely the mark of a great philosopher that he makes these things clearer than other writers can. Nevertheless, every great philosopher has certain controlling principles that underlie his work. These are easy enough to see if he states them in the book you are reading. But he may not have done so, reserving their treatment for another book. Or he may never treat them explicitly, but instead allow them to pervade every one of his works.

It is difficult to give examples of such controlling principles. Any that we might proffer would probably be disputed by philosophers, and we do not here have space to defend our choices. Nevertheless, we could mention the controlling idea of Plato that conversation about philosophical subjects is perhaps the most important of all human activities. Now this idea is seldom explicitly stated in the dialogues, although Socrates may be saying it when, in the *Apology,* he asserts that the unexamined life is not worth living, and Plato mentions it in the *Seventh Letter.* The point is that Plato expresses this view in a number of other places, though not in so many words—for example, in the *Protagoras,* where the audience is shown as disapproving of Protagoras' unwillingness to continue talking to Socrates. Another example is that of Cephalus, in Book I of the *Republic,* who happens to have other business to attend to and so departs. Plato seems to be saying here, though not explicitly, that it is a betrayal of man's deepest nature to refuse to join, for whatever reason, in the search for truth. But, as we have noted, this is not ordinarily cited as one of Plato's "ideas," because it is seldom explicitly discussed in his works.

We can find other examples in Aristotle. In the first place, it is always important to recognize, in reading any Aristotelean work, that things said in other works are relevant to the discussion. Thus the basic principles of logic, expounded in the *Organon,* are assumed in the *Physics.* In the second place, owing partly to the fact that the treatises are not finished works of art, their controlling principles are not always stated with satisfactory clarity. The *Ethics* is about many things: happiness, habit, virtue, pleasure, and so forth—the list could be very long. But the controlling insight is discovered only by the very careful reader. This is the insight that happiness is the *whole* of the good, not the *highest* good, for in that case it would be only one good among others. Recognizing this, we see that happiness does not consist in self-perfection, or the goods of self-improvement, even

though these constitute the highest among partial goods. Happiness, as Aristotle says, is the quality of a *whole* life, and he means "whole" not only in a temporal sense but also in terms of all the aspects from which a life can be viewed. The happy man is one, as we might say nowadays, who puts it all together—and keeps it there throughout his life. This insight is controlling in the sense that it affects almost all of the other ideas and insights in the *Ethics,* but it is not stated nearly as explicitly as it might be.

One more example. Kant's mature thought is often known as critical philosophy. He himself contrasted "criticism" to "dogmatism," which he imputed to many previous philosophers. By "dogmatism" he meant the presumption that the human intellect can arrive at the most important truths by pure thinking, without being aware of its own limitations. What is first required, according to Kant, is a critical survey and assessment of the mind's resources and powers. Thus, the limitation of the mind is a controlling principle in Kant in a way that it is not in any philosopher who precedes him in time. But while this is perfectly clear because explicitly stated in the *Critique of Pure Reason,* it is not stated, because it is assumed, in the *Critique of Judgment,* Kant's major work in aesthetics. Nevertheless, it is controlling there as well.

This is all we can say about finding the controlling principles in a philosophical book, because we are not sure that we can tell you how to discover them. Sometimes it takes years to do this, and many readings and rereadings. Nevertheless, it is the ideal goal of a good and thorough reading, and you should keep in mind that it is ultimately what you must try to do if you are to understand your author. Despite the difficulty of discovering these controlling principles, however, we do not recommend that you take the shortcut of reading books about the philosophers, their lives and opinions. The discovery you come to on your own will be much more valuable than someone else's ideas.

Once you have found an author's controlling principles, you will want to decide whether he adheres to them throughout his work. Unfortunately, philosophers, even the best of them, often do not do so. Consistency, Emerson said, "is the hobgoblin of little minds." That is a very carefree statement, but although it is probably wise to remember it, there is no doubt, either, that inconsistency in a philosopher is a serious problem. If a philosopher is inconsistent, you have to decide which of two sets of propositions he really means—the first principles, as he states them; or the conclusions, which do not in fact follow from the principles as stated. Or you may decide that neither is valid.

The reading of philosophical works has special aspects that relate to the difference between philosophy and science. We are here considering only theoretical works in philosophy, such as metaphysical treatises or books about the philosophy of nature.

The philosophical problem is to explain, not to describe, as science does, the nature of things. Philosophy asks about more than the connections of phenomena. It seeks to penetrate to the ultimate causes and conditions that underlie them. Such problems are satisfactorily explored only when the answers to them are supported by clear arguments and analysis.

The major effort of the reader, therefore, must be with respect to the terms and the initial propositions. Although the philosopher, like the scientist, has a technical terminology, the words that express his terms are usually taken from common speech, but used in a very special sense. This demands special care from the reader. If he does not overcome the tendency to use familiar words in a familiar way, he will probably make gibberish and nonsense of the book.

The basic terms of philosophical discussions are, of course, abstract. But so are those of science. No general knowledge is expressible except in abstract terms. There is nothing particularly difficult about abstractions. We use them every day of our lives and in every sort of conversation. However, the words “abstract” and “concrete” seem to trouble many persons.

Whenever you talk generally about anything, you are using abstractions. What you perceive through your senses is always concrete and particular. What you think with your mind is always abstract and general. To understand an “abstract word” is to have the idea it expresses. “Having an idea” is just another way of saying that you understand some general aspect of the things you experience concretely. You cannot see or touch or even imagine the general aspect thus referred to. If you could, there would be no difference between the senses and the mind. People who try to imagine what ideas refer to befuddle themselves, and end up with a hopeless feeling about all abstractions.

Just as inductive arguments should be the reader’s main focus in the case of scientific books, so here, in the case of philosophy, you must pay closest attention to the philosopher’s principles. They may be either things he asks you to assume with him, or matters that he calls self-evident. There is no trouble about assumptions. Make them to see what follows, even if you yourself have contrary presuppositions. It is a good mental exercise to pretend that you believe something you really do not believe. And the clearer you are about your own prejudgments, the more likely you will be not to misjudge those made by others.

It is the other sort of principles that may cause trouble. Few philosophical books fail to state some propositions that the author regards as self-evident. Such propositions are drawn directly from experience rather than proved by other propositions.

The thing to remember is that the experience from which they are drawn, as we have noted more than once, is, unlike the scientist’s special experience, the common experience of mankind. The philosopher does no work in laboratories, no research in the field. Hence to understand and test a philosopher’s leading principles you do not need the extrinsic aid of special experience, obtained by methodical investigation. He refers you to your own common sense and daily observation of the world in which you live.

In other words, the method according to which you should read a philosophical book is very similar to the method according to which it is written. A philosopher, faced with a problem, can do nothing but think about it. A reader, faced with a philosophical book, can do nothing but read it—which means, as we know, thinking about it. There are no other aids except the mind itself.

But this essential loneliness of reader and book is precisely the situation that we imagined at the beginning of our long discussion of the rules of analytical reading. Thus you can see why we say that the rules of reading, as we have stated and explained them, apply more directly to the reading of philosophical books than to the reading of any other kind.

On Making Up Your Own Mind

A good theoretical work in philosophy is as free from oratory and propaganda as a good scientific treatise. You do not have to be concerned about the “personality” of the author, or investigate his social and economic background. There is utility, however, in reading the works of other great philosophers who have dealt with the same problems as your author. The philosophers have carried on a long conversation with each other in the history of thought. You had better listen in on it before you make up your mind about what any of them says.

The fact that philosophers disagree should not trouble you, for two reasons. First, the fact of disagreement, if it is persistent, may point to a great unsolved and, perhaps, insoluble problem. It is good to know where the true mysteries are. Second, the disagreements of others are relatively unimportant. Your responsibility is only to make up your own mind. In the presence of the long conversation that the philosophers have carried on through their books, you must judge what is true and

what is false. When you have read a philosophical book well—and that means reading other philosophers on the same subject, too—you are in a position to judge.

It is, indeed, the most distinctive mark of philosophical questions that everyone must answer them for himself. Taking the opinions of others is not solving them, but evading them. And your answers must be solidly grounded, with arguments to back them up. This means, above all, that you cannot depend on the testimony of experts, as you may have to do in the case of science.

The reason is that the questions philosophers ask are simply more important than the questions asked by anyone else. Except children.

9. Theology

There are two kinds of theology, natural theology and dogmatic theology. Natural theology is a branch of philosophy; it is the last chapter, as it were, in metaphysics. If you ask, for example, whether causation is an endless process, whether everything is caused, you may find yourself, if you answer in the affirmative, involved in an infinite regress. Therefore you may have to posit some originating cause that is not itself caused. Aristotle called this uncaused cause an unmoved mover. You could give it other names—you could even say that it was merely another name for God— but the point is that you would have arrived at the conception by the unaided effort —the natural working—of your mind.

Dogmatic theology differs from philosophy in that its first principles are articles of faith adhered to by the communicants of some religion. A work of dogmatic theology always depends upon dogmas and the authority of a church that proclaims them.

If you are not of the faith, if you do not belong to the church, you can nevertheless read such a theological book *well* by treating its dogmas with the same respect you treat the assumptions of a mathematician. But you must always keep in mind that an article of faith is not something that the faithful *assume.* Faith, for those who have it, is the most certain form of knowledge, not a tentative opinion.

Understanding this seems to be difficult for many readers today. Typically, they make either or both of two mistakes in dealing with dogmatic theology. The first mistake is to refuse to accept, even temporarily, the articles of faith that are the first principles of the author. As a result, the reader continues to struggle with these first principles, never really paying attention to the book itself. The second mistake is to assume that, because the first principles are dogmatic, the arguments based on them, the reasoning that they support, and the conclusions to which they lead are all dogmatic in the same way. It is true enough, of course, if certain principles are accepted, and the reasoning that is based on them is cogent, that the conclusions must then be accepted too—at least to the extent that the principles are. But if the reasoning is defective, the most acceptable first principles will lead to invalid conclusions.

We are speaking here, as you can see, of the difficulties that face a non-believing reader of a theological work. His task is to accept the first principles as true while he is reading the book, and then to read it with all the care that any good expository work deserves. The faithful reader of a work that is essential to his faith has other difficulties to face. However, these problems are not confined to reading theology.

How to Read "Canonical" Books

There is one very interesting kind of book, one kind of reading, that has not yet been discussed. We use the term "canonical" to refer to such books; in an older tradition we might have called them "sacred" or "holy," but those words no longer apply to all such works, though they still apply to some of them.

A prime example is the Holy Bible, when it is read not as literature but instead as the revealed Word of God. For orthodox Marxists, however, the works of Marx must be read in much the same way as the Bible must be read by orthodox Jews or Christians. And Mao Tse-tung's Little Red Book has an equally canonical character for a "faithful" Chinese Communist.

The notion of a canonical book can be extended beyond these obvious examples. Consider any institution—a church, a political party, a society—that among other things (1) is a teaching institution, (2) has a body of doctrine to teach, and (3) has a faithful and obedient membership. The members of any such organization read *reverentially.* They do not—even cannot—question the authorized or right reading of the books that to them are canonical. The faithful are debarred by their faith from finding error in the "sacred" text, to say nothing of finding nonsense there.

Orthodox Jews read the Old Testament in this way; Christians, the New Testament; Muslims, the Koran; orthodox Marxists, the works of Marx and Lenin and, depending on the political climate, those of Stalin; orthodox Freudian psychoanalysts, the works of Freud; U.S. Army officers, the infantry manual. And you can think of many more examples by yourself.

In fact, almost all of us, even if we have not quite reached it, have approached the situation in which we must read canonically. A fledgling lawyer, intent on passing the bar exams, must read certain texts in a certain way in order to attain a perfect score. So with doctors and other professionals; and indeed so with all of us when, as students, we were required at the peril of "failure" to read a text according to our professor's interpretation of it. (Of course, not all professors fail their students for disagreeing with them!)

The characteristics of this kind of reading are perhaps summed up in the word "orthodox," which is almost always applicable. The word comes from two Greek roots, meaning "right opinion." These are books for which there is *one and only one right reading;* any other reading or interpretation is fraught with peril, from the loss of an "A" to the damnation of one's soul. This characteristic carries with it an obligation. The faithful reader of a canonical book *is obliged to make sense out of it* and to find it true in one or another sense of "true." If he cannot do this by himself, *he is obliged to go to someone who can.* This may be a priest or a rabbi, or it may be his superior in the party hierarchy, or it may be his professor. In any case, he is obliged to accept the resolution of his problem that is offered him. He reads essentially without freedom; but in return for this he gains a kind of satisfaction that is possibly never obtained when reading other books.

Here, in fact, we must stop. The problem of reading the Holy Book—if you have faith that it is the Word of God—is the most difficult problem in the whole field of reading. There have been more books written about how to read Scripture than about all other aspects of the art of reading together. The Word of God is obviously the most difficult writing men can read; but it is also, if you believe it *is* the Word of God, the most important to read. The effort of the faithful has been duly proportionate to the difficulty of the task. It would be true to say that, in the European tradition at least, the Bible is *the* book in more senses than one. It has been not only the most widely read, but also the most carefully read, book of all.

10. Social Science

The concepts and terminology of the social sciences pervade almost everything we read today.

Modern journalism, for example, does not limit itself to reporting facts, except in the kind of shorthand, “who-what-why-when-where” news story that one finds on the front page of a newspaper. Journalists, much more commonly, enmesh the facts in interpretation, commentary, analysis of the news. These interpretations and comments draw on the concepts and terminology of the social sciences.

These concepts and this terminology are also reflected in the vast number of current books and articles that may be grouped together under the heading of social criticism. We are confronted with a continuous flow of literature on such subjects as race problems, crime, law enforcement, poverty, education, welfare, war and peace, good and bad government. Much of this literature borrows its ideology and language from the social sciences.

The literature of social science is not confined to nonfiction. There is also a large and important category of contemporary writing that might be termed social-science fiction. Here the aim is to create artificial models of society that allow us, for example, to explore the social consequences of technological innovation. The organization of social power, the kinds of property and ownership, and the distribution of wealth are variously described, deplored, or lauded in novels, plays, stories, moving pictures, television shows. Insofar as they do this they may be said to have social significance or to contain “relevant messages.” At the same time they draw on and disseminate elements of the social sciences.

Furthermore, there is hardly any social, economic, or political problem that has not been tackled by specialists in these fields, either on their own or by invitation from officials who are actively coping with these problems. Specialists in the social sciences help to formulate the problems and are called upon to help in dealing with them.

Far from the least important factor in the growing pervasiveness of the social sciences is their introduction at the high school level and in the junior and community colleges. In fact, student enrollments in social science courses are running far ahead of enrollments in the more traditional literature and language courses. And enrollments in social science courses greatly exceed those in courses dealing with the “pure” sciences.

What Is Social Science?

We have been talking of social science as if it were a single entity. That is hardly the case.

Which, in fact, are the social sciences? One way to answer the question is to see what departments and disciplines universities group under this name. Social science divisions usually include departments of anthropology, economics, politics, and sociology. Why do they not ordinarily include as well schools of law, education, business, social service, and public administration, all of which draw on the concepts and methods of the social sciences for their development? The reason commonly given for the separation of these schools from the social science divisions is that the main purpose of such schools is to train for professional work outside of the university, while the previously mentioned departments are more exclusively dedicated to the pursuit of systematic knowledge of human society, an activity that usually goes on within the university.

There is presently a trend in universities toward the establishment of centers and institutes for interdisciplinary studies. These centers cut across the conventional social science departments and professional schools, and include studies in the theories and methods of statistics, demography, psephology (the science of elections and polling), policy-and decision-making, recruitment and treatment of personnel, public administration, human ecology, and many more. Such centers are producing studies and reports that incorporate findings of a dozen or more of these specialties. Considerable sophistication is required even to discern the various strands of these efforts, let alone judge the validity of the findings and conclusions.

What about psychology? Those social scientists who interpret their field strictly tend to exclude psychology on the grounds that it concerns itself with individual and personal characteristics, while the social sciences proper focus on cultural, institutional, and environmental factors. Those who are less strict, while conceding that physiological psychology should be subsumed under the biological sciences, hold that psychology, both normal and abnormal, should be regarded as a social science on the grounds of the inseparability of the individual from his social environment.

Psychology, incidentally, is a prime example of a social science area that is currently enjoying great popularity among students. It is possible that enrollments in psychology across the country are larger than in any other subject. And the literature of psychology, at every level from the most technical to the most popular, is enormous.

What of the behavioral sciences? Where do they fit into the social science picture? As originally used, the term behavioral science included sociology and anthropology and the behavioral aspects of biology, economics, geography, law, psychology and psychiatry, and political science. The accent on behavior served to emphasize observable, measurable behavior capable of being systematically investigated and of producing verifiable findings. Recently, the term behavioral sciences has come to be used almost as a synonym of the term social sciences, but many purists object to this usage.

Finally, what about history? It is acknowledged that the social sciences draw on the study of history for data and for exemplifications of their generalisations. However, although history, viewed as accounts of particular events and persons, may be scientific in the minimal sense of constituting systematic knowledge, it is not a science in the sense that of itself it yields systematic knowledge of patterns or laws of behaviour and development.

Is it possible, then, to define what we mean by social science? We think so, at least for the purposes of this chapter. Such fields as anthropology, economics, politics, and sociology constitute a kind of central core of social science, which almost all social scientists would include in any definition. In addition, we think it would be conceded by most social scientists that much, though not all, of the literature of such fields as law, education, and public administration, and some of the literature of such fields as business and social service, together with a considerable portion of psychological literature, falls within the confines of a reasonable definition. We will assume that such a definition, although admittedly imprecise, is clear to you in what follows.

The Apparent Ease of Reading Social Science

A great deal of social science writing seems like the easiest possible material to read. The data are often drawn from experiences familiar to the reader—in this respect, social science is like poetry or philosophy—and the style of exposition is usually narrative, already familiar to the reader through his reading of fiction and history.

In addition, we have all become familiar with the jargon of social science and use it often. Such terms as culture (cross, counter, and sub), in-group, alienation, status, input/output, infra-structure, ethnic, behavioural, consensus, and scores like them, tend to appear in almost every conversation and in almost everything we read.

Consider the word “society” itself. What a chameleon-like word it is, what a host of adjectives can be placed in front of it, while throughout it continues to convey the broad notion of people living together rather than in isolation. We hear of the aberrant society, the abortive society, the acquiescent society, the acquisitive society, the affluent society, and we can continue on through the alphabet until we arrive at the zymotic society, which is one that is in a continuous state of ferment, not unlike our own.

“Social,” as an adjective, is also a word of many and familiar meanings. There is social power, social pressure, and social promise—and then, of course, there are the ubiquitous social problems. The last phrase, indeed, is a fine example of the specious ease that is involved in both the reading and the writing of social science literature. We would be willing to wager that in the last few months, if not the last few weeks, you have read and even possibly written the phrase “political, economic, and social problems.” When you read or wrote it, you were probably clear as to what was meant by political and economic problems. But what did you, or the author, mean by social problems?

The jargon and metaphors of much social science writing, together with the deep feeling that often imbues it, make for deceptively easy reading. The references are to matters that are readily familiar to the reader; indeed, he reads or hears about them almost daily. Furthermore, his attitudes and feelings regarding them are usually firmly developed. Philosophy, too, deals with the world as we commonly know it, but we are not ordinarily "committed" on philosophical questions. But on matters with which social science deals, we are likely to have strong opinions.

Difficulties of Reading Social Science

Paradoxically, the very factors we have discussed, the factors which make social science seem easy to read, also make it difficult to read. Consider the last factor mentioned, for instance—the commitment that you as a reader are likely to have to some view of the matter your author is considering. Many readers fear that it would be disloyal to their commitment to stand apart and impersonally question what they are reading. Yet this is necessary whenever you read analytically. Such a stance is implied by the rules of reading, at least by the rules of structural outlining and interpretation. If you are going to answer the first two questions that should be asked of anything you read, you must, as it were, check your opinions at the door. You cannot understand a book if you refuse to hear what it is saying.

The very familiarity of the terms and propositions in social science writing is also an obstacle to understanding. Many social scientists recognize this themselves. They object vigorously to the use of more or less technical terms and concepts in popular journalism and other writings. An example of such a concept is that of the Gross National Product (GNP). In serious economic writing, the concept is employed in a relatively limited sense. But many reporters and columnists, some social scientists say, make the concept do too much work. They use it too widely, without really understanding what it means. Obviously, if the writer of something you are reading is confused about his use of a key term, you, as reader, must be so, too.

Let us try to make this point clear by drawing a distinction between the social sciences, on the one hand, and the so-called hard sciences—physics, chemistry, and the like—on the other hand. We have observed that the author of a scientific book (taking "scientific" in the latter sense) makes clear what he assumes and what he desires to prove, and also makes sure that his terms and propositions are easy to spot. Since coming to terms and finding the propositions is a main part of reading any expository work, this means that much of the work is done for you in the case of such books. You may still have difficulty with the mathematical form of presentation; and if you do not have a firm grasp of the arguments and of the experimental or observational basis of the conclusions, you will find it hard to criticize the book—that is, to answer the questions, Is it true? and What of it? Nevertheless, there is an important sense in which the reading of this kind of scientific books is easier than the reading of most other kinds of expository works.

Another way to say what it is that the hard scientist does is to say that he "stipulates his usage"—that is, he informs you what terms are essential to his argument and how he is going to use them. Such stipulations usually occur at the beginning of the book, in the form of definitions, postulates, axioms, and so forth.

Since stipulation of usage is characteristic of these fields, it has been said that they are like games or have a "game structure." Stipulation of usage is like establishing the rules of a game. If you want to play poker, you do not dispute the rule that three of a kind is a better hand than two pairs; if you want to play bridge, you do not argue with the convention that a queen takes a jack (in the same suit), or that the highest trump takes any other card (in a suit contract). Similarly, you do not dispute a hard scientist's stipulations in reading his book. You accept them, and go on from there.

Until quite recently, at least, stipulation of usage was not as common in the social sciences as it is in the hard sciences. One reason for this is that the social sciences were typically not mathematicized. Another is that stipulation of usage in the social or behavioral sciences is *harder to do.* It is one thing to define a circle or an isosceles triangle; it is quite another to define an economic depression or mental health. Even if a social scientist attempts to define such terms, his readers are inclined to question his usage. As a result, the social scientist must continue to struggle with his own terms throughout his work—and his struggle creates problems for his reader.

The most important source of difficulty in reading social science derives from the fact that this field of literature is a mixed, rather than a pure, kind of expository writing. We have seen how history is a mixture of fiction and science, and how we must read it with that in mind. We are familiar with this kind of mixture; we have had a great deal of experience with it. The situation in social science is quite different. Much social science is a mixture of science, philosophy, and history, often with some fiction thrown in for good measure.

If social science were always the same kind of mixture, we could become familiar with it as we have with history. But this is far from the case. The mixture itself shifts from book to book, and the reader is confronted with the task of identifying the various strands that go to make up what he is reading. These strands may change in the course of a single book as well as in different books. It is no easy job to separate them out.

You will recall that the first step the analytical reader has to take is to answer the question, What kind of book is this? In the case of fiction, that question is relatively easy to answer. In the case of science and philosophy, it is also relatively easy; and even if history is a mixed form, at least the reader ordinarily knows that he is reading history. But the various strands that go to make up social science—sometimes interwoven in this pattern, sometimes in that, sometimes in still another—make the question very hard to answer when we are reading a work in any of the fields involved. The problem, in fact, *is precisely as difficult as the problem of defining social science.*

Nevertheless, the analytical reader must somehow manage to answer the question. It is not only his first task, but also his most important. If he is able to say what strands go to make up the book he is reading, he will have moved a good way toward understanding it.

Outlining a work in social science poses no special problems, but coming to terms with the author, as we have already suggested, may be extremely difficult, owing to the relative inability of the author to stipulate his usage. Nevertheless, some common understanding of the key terms is usually possible. From terms we move to propositions and arguments, and here again there is no special problem if the book is a good one. But the last question, What of it?, requires considerable restraint on the part of the reader. It is here that the situation we described earlier may occur—namely, the situation in which the reader says, "I cannot fault the author's conclusions, but I nevertheless disagree with them." This comes about, of course, because of the prejudgments that the reader is likely to have concerning the author's approach and his conclusions.

Reading Social Science Literature

More than once in the course of this chapter we have employed the phrase "social science literature" instead of "social science book." The reason is that it is customary in social science to read several books about a subject rather than one book for its own sake. This is not only because social science is a relatively new field with as yet but few classic texts. It is also because when reading social science, we often have our eye primarily on *a particular matter or problem,* rather than on *a particular author or book.* We are interested in law enforcement, for example, and we read half a dozen works on the subject. Or our interest may concern race relations, or education, or taxation, or the problems of local government. Typically, there is no single, authoritative work on any of these subjects, and we must therefore read several. One sign of this is that social science authors themselves, in order to keep up with the times, must constantly bring out new, revised editions of their works; and new works supersede older ones and rapidly render them obsolete.

To some extent, a similar situation obtains in philosophy, as we have already observed. Fully to understand a philosopher, you should make some attempt to read the philosophers your author himself has read, the philosophers who have influenced him. To some extent it is also true in history, where we suggested that, if you want to discover the truth of the past, you had better read several books about it rather than one. But in those cases the likelihood that you would find one major, authoritative work was much greater. In social science that is not so common, and so the necessity of reading several works rather than one is much more urgent.

The rules of analytical reading are not in themselves applicable to the reading of several works on the same subject. They apply to each of the works that is read, of course, and if you want to read any of them well you have to observe them. But new rules of reading are required as we pass from the third level of reading (analytical reading), to the fourth (syntopical reading). We are now prepared to tackle that fourth level, having come to see, because of this characteristic of social science, the need for it.

Pointing this out makes it clear why we relegated the discussion of the social sciences to the last chapter in Part Three. It should now be clear why we organised the discussion in the way we did. We began with the reading of practical books, which are different from all others because of the special obligation to act that the reader is under if he agrees with and accepts what he is reading. We then treated fiction and poetry, which pose special problems that are unlike those of expository books. Finally, we dealt with three types of theoretical, expository writing—science and mathematics, philosophy, and social science. Social science came last because of the need to read it syntopically.

11. How to Read Imaginative, Films Literature

1. **Open How To read Fiction Books and then Imaginative Folder. Choose and decide the Book. Listen and Apply one of the chosen Books:**
    A. **Literature & Composition_ Reading - Writing - Thinking.**
    B. **Literature_ An Introduction to Fiction, Poetry, and Drama_Includes 1995 Mla Guidlines.**
    C. **How To Read A Film.**
    D. **How to Read a Film_ Movies, Media, and Beyond.**
    E. **How to Read Novels Like a Professor_ A Jaunty Exploration of the World's Favorite Literary Form.**
    F. **Reading Like a Writer_ A Guide for People Who Love Books and for Those Who Want to Write Them.**
    G. **The Language of Composition_ Reading, Writing.**

So far, this book has been concerned with only half the reading that most people do. Even that is too liberal an estimate. Probably the greater part of anybody's reading time is spent on newspapers and magazines, and on things that have to be read in connection with one's job. And so far as books are concerned, most of us read more fiction than nonfiction. Furthermore, of the nonfiction books, the most popular are those that, like newspapers and magazines, deal journalistically with matters of contemporary interest.

We have not deceived you about the rules set forth in the preceding chapters. Before undertaking to discuss them in detail, we explained that we would have to limit ourselves to the business of reading serious nonfiction books. To have expounded the rules for reading imaginative and expository literature *at the same time* would have been confusing. But now we cannot ignore the other types of reading any longer.

Before embarking on the task, we want to emphasize one rather strange paradox. The problem of knowing how to read imaginative literature is inherently much more difficult than the problem of knowing how to read expository books. Nevertheless, it seems to be a fact that such skill is more widely possessed than the art of reading science and philosophy, politics, economics, and history. How can this be true?

It may be, of course, that people deceive themselves about their ability to read novels intelligently. From our teaching experience, we know how tongue-tied people become when asked to say what they liked about a novel. That they enjoyed it is perfectly clear to them, but they cannot give much of an account of their enjoyment or tell what the book contained that caused them pleasure. This might indicate that people can be good readers of fiction without being good critics. We suspect this is, at best, a half-truth. A critical reading of anything depends upon the fullness of one's apprehension. Those who cannot

say what they like about a novel probably have not read it below its most obvious surfaces. However, there is more to the paradox than that. Imaginative literature primarily pleases rather than teaches. It is much easier to be pleased than taught, but much harder to know *why* one is pleased. Beauty is harder to analyze than truth.

To make this point clear would require an extensive analysis of aesthetic appreciation. We cannot undertake that here. We can, however, give you some advice about how to read imaginative literature. We will proceed, first, by the *way of negation,* stating the obvious "don'ts" instead of the constructive rules. Next, we will proceed by the *way of analogy,* briefly translating the rules for reading nonfiction into their equivalents for reading fiction. Finally, in the next chapter, we will proceed to examine the problems of reading specific types of imaginative literature, namely, novels, plays, and lyric poems.

How Not to Read Imaginative Literature

In order to proceed by the way of negation, it is first of all necessary to grasp the basic differences between expository and imaginative literature. These differences will explain why we cannot read a novel as if it were a philosophical argument, or a lyric as if it were a mathematical demonstration.

The most obvious difference, already mentioned, relates to the purposes of the two kinds of writing. Expository books *try to convey knowledge*—knowledge about experiences that the reader has had or could have. Imaginative ones *try to communicate an experience itself*—one that the reader can have or share *only* by reading—and if they succeed, they give the reader something to be enjoyed. Because of their diverse intentions, the two sorts of work appeal differently to the intellect and the imagination.

We *experience* things through the exercise of our senses and imagination. To *know* anything we must use our powers of judgment and reasoning, which are intellectual. This does not mean that we can think without using our imagination, or that sense experience is ever wholly divorced from rational insight or reflection. The matter is only one of emphasis. Fiction appeals primarily to the imagination. That is one reason for calling it imaginative literature, in contrast to science and philosophy which are intellectual.

This fact about imaginative literature leads to what is probably the most important of the negative injunctions we want to suggest. *Don't try to resist the effect that a work of imaginative literature has on you.*

We have discussed at length the importance of reading actively. This is true of all books, but it is true in quite different ways of expository works and of poetry. The reader of the former should be like a bird of prey, constantly alert, always ready to pounce. The kind of activity that is appropriate in reading poetry and fiction is not the same. It is a sort of passive action, if we may be allowed the expression, or, better, active passion. We must act in such a way, when reading a story, that we let it act on us. We must allow it to move

us, we must let it do whatever work it wants to do on us. We must somehow make ourselves open to it.

We owe much to the expository literature—the philosophy, science, mathematics — that has shaped the real world in which we live. But we could not live in this world if we were not able, from time to time, to get away from it. We do not mean that imaginative literature is always, or essentially, escapist. In the ordinary sense of that term, the idea is contemptible. If we must escape from reality, it should be to a deeper, or greater, reality. This is the reality of our inner life, of our own unique vision of the world. To discover this reality makes us happy; the experience is deeply *satisfying* to some part of ourselves we do not ordinarily touch. In any event, the rules of reading a great work of literary art should have as an end or goal just such a profound experience. The rules should clear away all that stops us from feeling as deeply as we possibly can.

The basic difference between expository and imaginative literature leads to another difference. Because of their radically diverse aims, these two kinds of writing necessarily use language differently. The imaginative writer tries to maximise the latent ambiguities of words, in order thereby to gain all the richness and force that is inherent in their multiple meanings. He uses metaphors as the units of his construction just as the logical writer uses words sharpened to a single meaning. What Dante said of *The Divine Comedy,* that it must be read as having several distinct though related meanings, generally applies to poetry and fiction. The logic of expository writing aims at an ideal of unambiguous explicitness. Nothing should be left between the lines. Everything that is relevant and statable should be said as explicitly and clearly as possible. In contrast, imaginative writing relies as much upon what is implied as upon what is said. The multiplication of metaphors puts almost more content between the lines than in the words that compose them. The whole poem or story says something that none of its words say or can say.

From this fact we obtain another negative injunction. *Don't look for terms, propositions, and arguments in imaginative literature.* Such things are logical, not poetic, devices. "In poetry and in drama," the poet Mark Van Doren once observed, "statement is one of the obscurer mediums." What a lyric poem "states," for instance, cannot be found in any of its sentences. And the whole, comprising all its words in their relations to and reactions upon each other, says something that can never be confined within the straitjacket of propositions. (However, imaginative literature contains elements that are *analogous* to terms, propositions, and arguments, and we will discuss them in a moment.)

Of course, we can learn from imaginative literature, from poems and stories and especially, perhaps, plays—but not in the same way as we are taught by scientific and philosophical books. We learn from experience—the experience that we have in the course of our daily lives. So, too, we can learn from the vicarious, or artistically created, experiences that fiction produces in our imagination. In this sense, poems and stories teach as well as please. But the sense in which science and philosophy teach us is different. Expository works do not provide us with novel experiences. They comment on such experiences as we already have or can get. That is why it seems right to say that expository books teach primarily, while imaginative books teach only derivatively, by

creating experiences from which we can learn. In order to learn from such books, we have to do our own thinking about experience; in order to learn from scientists and philosophers, we must first try to understand the thinking they have done.

Finally, one last negative rule. *Don't criticise fiction by the standards of truth and consistency that properly apply to communication of knowledge.* The "truth" of a good story is its verisimilitude, its intrinsic probability or plausibility. It must be a likely story, but it need not describe the facts of life or society in a manner that is verifiable by experiment or research. Centuries ago, Aristotle remarked that "the standard of correctness is not the same in poetry as in politics," or in physics or psychology for that matter. Technical inaccuracies about anatomy or errors in geography or history should be criticized when the book in which they occur offers itself as a treatise on those subjects. But misstatements of fact do not mar a story if its teller succeeds in surrounding them with plausibility. When we read history, we want the truth in some sense, and we have a right to complain if we do not get it. When we read a novel we want a story that must be true only in the sense that it *could have happened* in the world of characters and events that the novelist has created, and re-created in us.

What do we do with a philosophical book, once we have read it and understood it? We test it—against the common experience that was its original inspiration, and that is its only excuse for being. We say, is this true? Have we felt this? Have we always thought this without realizing it? Is this obvious now, though it was not previously? Complicated as the author's theory or explanation may be, is it actually simpler than the chaotic ideas and opinions we had about this subject before?

If we can answer most of these questions in the affirmative, then we are bound by the community of understanding that is between ourselves and the author. When we understand and do not disagree, we must say, "This is our common sense of the matter. We have tested your theory and found it correct."

Not so with poetry. We cannot test *Othello,* say, against our own experience, unless we too are Moors and wedded to Venetian ladies whom we suspect of treachery. But even if this were so, Othello is not every Moor, and Desdemona is not every Venetian lady; and most such couples would have the good fortune not to know an Iago. In fact, all but one would be so fortunate; Othello, the character as well as the play, is unique.

General Rules for Reading Imaginative Literature

To make the "don'ts" discussed in the last section more helpful, they must be supplemented by constructive suggestions. These suggestions can be developed by analogy from the rules of reading expository works.

There are, as we have seen, three groups of such rules. The first group consists of rules for discovering the unity and part-whole structure; the second consists of rules for identifying and interpreting the book's component terms, propositions, and arguments; the

third consists of rules for criticizing the author's doctrine so that we can reach intelligent agreement or disagreement with him. We called these three groups of rules structural, interpretive, and critical. By analogy, we can find similar sets of rules to guide us in reading poems, novels, and plays.

First, we can translate the structural rules—the rules of outlining—into their fictional analogues as follows.

(1) You must classify a work of imaginative literature according to its kind. A lyric tells its story primarily in terms of a single emotional experience, whereas novels and plays have much more complicated plots, involving many characters, their actions and their reactions upon one another, as well as the emotions they suffer in the process. Everyone knows, furthermore, that a play differs from a novel by reason of the fact that it narrates entirely by means of actions and speeches.

(There are some interesting exceptions to this, which we will mention later.) The playwright can never speak in his own person, as the novelist can, and frequently does, in the course of a novel. All of these differences in manner of writing call for differences in the reader's receptivity. Therefore, you should recognise at once the kind of fiction you are reading.

(2) You must grasp the unity of the whole work. Whether you have done this or not can be tested by whether you are able to express that unity in a sentence or two. The unity of an expository work resides ultimately in the main problem that it tries to solve. Hence its unity can be stated by the formulation of this question, or by the propositions that answer it. The unity of fiction is also connected with the problem the author has faced, but we have seen that that problem is the attempt to convey a concrete experience, and so *the unity of a story is always in its plot.* You have not grasped the whole story until you can summarize its plot in a brief narration—*not* a proposition or an argument. Therein lies its unity.

Note that there is no real contradiction here between what we have just said about the unity of plot and what we said about the uniqueness of the language of a fictional work. Even a lyric has a "plot" in the sense in which we are using the term here. But the plot is not the concrete experience that is re-created in the reader by the work, be it lyric, play, or novel; it is only the framework of it, or perhaps the occasion of it. It stands for the unity of the work, which is properly in the experience itself, just as the logical summation of the meaning of an expository work stands for the argument of the whole.

(3) You must not only reduce the whole to its simplest unity, but you must also discover how that whole is constructed out of all its parts. The parts of an expository book are concerned with parts of the whole problem, the partial solutions contributing to the solution of the whole. The parts of fiction are the various steps that the author takes to develop his plot—the details of characterisation and incident. The way in which the parts are arranged differs in the two cases. In science and philosophy, they must be ordered logically. In a story, the parts must somehow fit into a temporal scheme, a progress from a beginning through the middle to its end. To know the structure of a narrative, you must know where it begins—which is not necessarily on the first page, of course—what it goes through, and where it comes out at. You must know the various crises that lead up to the climax, where and how the climax occurs, and what happens in the aftermath. (By

“aftermath” we do not mean what happens after the story is over. Nobody can know that. We mean only what happens, within the narrative, after the climax has occurred.)

An important consequence follows from the points we have just made. The parts or sub-wholes of an expository book are more likely to be independently readable than the parts of fiction. Euclid published his *Elements* in thirteen parts, or books, as he called them, and the first of them can be read by itself. That is more or less the case with every well-organized expository book. Its sections or chapters, taken separately or in subgroups, make sense. But the chapters of a novel, the acts of a play, or the verses of a lyric often become relatively meaningless when wrenched from the whole.

Second, what are the interpretive rules for reading fiction? Our prior consideration of the difference between a poetic and a logical use of language prepares us to make a translation of the rules that direct us to find the terms, the propositions, and the arguments. We know we should not do that, but we must do something analogous to it.

(1) The elements of fiction are its episodes and incidents, its characters, and their thoughts, speeches, feelings, and actions. Each of these is an element in the world the author creates. By manipulating these elements, the author tells his story. They are like the terms in logical discourse. Just as you must come to terms with an expository writer, so here you must become acquainted with the details of incident and characterization. You have not grasped a story until you are familiar with its characters, until you have lived through its events.

(2) Terms are connected in propositions. The elements of fiction are connected by the total scene or background against which they stand out in relief. The imaginative writer, we have seen, creates a world in which his characters “live, move, and have their being.” The fictional analogue of the rule that directs you to find the author’s propositions can, therefore, be stated as follows: become at home in this imaginary world; know it as if you were an observer on the scene; become a member of its population, willing to befriend its characters, and able to participate in its happenings by sympathetic insight, as you would do in the actions and sufferings of a friend. If you can do this, the elements of fiction will cease to be so many isolated pawns moved about mechanically on a chessboard. You will have found the connections that vitalize them into members of a living society.

(3) If there is any motion in an expository book, it is the movement of the argument, a logical transition from evidences and reasons to the conclusions they support. In the reading of such books, it is necessary to follow the argument. Hence, after you have discovered its terms and propositions, you are called upon to analyze its reasoning. There is an analogous last step in the interpretive reading of fiction. You have become acquainted with the characters. You have joined them in the imaginary world wherein they dwell, consented to the laws of their society, breathed its air, tasted its food, traveled its highways. Now you must follow them through their adventures. The scene or background, the social setting, is (like the proposition) a kind of *static* connection of the elements of fiction. The unraveling of the plot (like the arguments or reasoning) is the dynamic

connection. Aristotle said that plot is the soul of a story. It is its life. To read a story well you must have your finger on the pulse of the narrative, be sensitive to its very beat.

Before leaving these fictional equivalents for the interpretive rules of reading, we must caution you not to examine the analogy too closely. An analogy of this sort is like a metaphor that will disintegrate if you press it too hard. The three steps we have suggested outline the way in which one becomes progressively aware of the artistic achievement of an imaginative writer. Far from spoiling your enjoyment of a novel or play, they should enable you to enrich your pleasure by knowing intimately the sources of your delight. You will not only know *what* you like but also *why* you like it.

One other caution: the foregoing rules apply mainly to novels and plays. To the extent that lyric poems have some narrative line, they apply to lyrics also. But the rules do not cease to apply to non-narrative lyrics, although the connection is much less close. A lyric is the representation of a concrete experience, just like a long story, and it attempts to re-create that experience in the reader. There is a beginning, middle, and end of even the shortest lyric, just as there is a temporal sequence in any experience, no matter how brief and fleeting. And though the cast of characters may be very small in a short lyric, there is always at least one character—namely, the speaker of the poem.

Third, and last, what are the critical rules for reading fiction? You may remember that we distinguished, in the case of expository works, between the general maxims governing criticism and a number of particular points—specific critical remarks. With respect to the general maxims, the analogy can be sufficiently drawn by one translation. Where, in the case of expository works, the advice was not to criticize a book—not to say you agree or disagree—until you can first say you understand, so here the maxim is: *don't criticize imaginative writing until you fully appreciate what the author has tried to make you experience.*

There is an important corollary to this. The good reader of a story does not question the world that the author creates—the world that is re-created in himself. "We must grant the artist his subject, his idea, his *donné,*" said Henry James in *The Art of Fiction;* "our criticism is applied only to what he makes of it." That is, we must merely appreciate the fact that a writer sets his story in, say, Paris, and not object that it would have been better to set it in Minneapolis; but we have a right to criticize what he does with his Parisians and with the city itself.

In other words, we must remember the obvious fact that we do not agree or disagree with fiction. We either like it or we do not. Our critical judgment in the case of expository books concerns their *truth,* whereas in criticizing belles-lettres, as the word itself suggests, we consider chiefly their *beauty.* The beauty of any work of art is related to the pleasure it gives us when we know it well.

Let us restate the maxims, then, in the following manner. Before you express your likes and dislikes, you must first be sure that you have made an honest effort to appreciate the work. By appreciation, we mean having the experience that the author tried to produce

for you by working on your emotions and imagination. Thus, you cannot *appreciate* a novel by reading it passively (indeed, as we have remarked, you must read it passionately) any more than you can *understand* a philosophical book that way. To achieve appreciation, as to achieve understanding, you must read actively, and that means performing all the acts of analytical reading that we have briefly outlined.

After you have completed such a reading, you are competent to judge. Your first judgment will naturally be one of taste. You will say not only *that* you like or dislike the book, but also *why.* The reasons you give will, of course, have some critical relevance to the book itself, but in their first expression they are more likely to be about you—your preferences and prejudices—than about the book. Hence, to complete the task of criticism, you must objectify your reactions by pointing to those things in the book that caused them. You must pass from saying what *you* like or dislike and why, to saying what is good or bad about the *book* and why.

The better you can reflectively discern the causes of your pleasure in reading fiction or poetry, the nearer you will come to knowing the artistic virtues in the literary work itself. You will thus gradually develop a standard of criticism. And you will probably find a large company of men and women of similar taste to share your critical judgments. You may even discover, what we think is true, that good taste in literature is acquired by anyone who learns to read.

12. Suggestions for Reading Stories, Plays, and Poems

1. **Open How To read Fiction Books and Stories, Plays and Poems Folder. Choose and decide the Book. Listen and Apply one of the chosen Books:**
2. **Listen and Apply The Following Books on Stories, Plays, Poetry from Stories, Plays and Poems:**
    A. **How to read Poetry and understand Poetry.**
    B. **How To Read and Why.**
    C. **How to Read Poetry Like a Professor_ A Quippy and Sonorous Guide to Verse.**
    D. **How to Read World Literature (How to Study Literature).**
    E. **Literature_ An Introduction to Fiction, Poetry, and Drama_Includes 1995 Mla Guidlines.**
    F. **POETRY THE BASICS How do I read a poem_ Do I really understand poetry.**
    G. **Poetry For Dummies.**
    H. **Poetry for Students.**
    I. **Poetry for Students.**
    J. **Poetry the Basics.**
    K. **The Art of Poetry_ How to Read a Poem.**
    L. **Poetry Handbook.**
    M. **Theory into Poetry.**
    N. **Understanding Poetry_ An Anthology for College Students.**
    O. **Writing Poetry.**

The parallel rules for reading imaginative literature that were discussed in the last chapter were general ones, applying across the board to all kinds of imaginative literature—novels and stories, whether in prose or verse (including epics); plays, whether tragedies or comedies or something in between; and lyric poems, of whatever length or complexity.

These rules, being general, must be adapted somewhat when they are applied to the different kinds of imaginative literature. In this chapter we want to suggest the adaptations that are required. We will have something particular to say about the reading of stories, plays, and lyric poems, and we will also include notes on the special problems presented by the reading of epic poems and the great Greek tragedies.

Before proceeding to those matters, however, it is desirable to make some remarks about the last of the four questions that the active and demanding reader must ask of any book, when that question is asked of a work of imaginative literature.

You will recall that the first three questions are: first, What is the book about as a whole?; second, What is being said in detail, and how?; and third, Is the book true, in whole or part? The application of these three questions to imaginative literature was covered in the last chapter. The first question is answered when you are able to describe the unity of the plot of a story, play, or poem—"plot" being construed broadly to include the action or movement of a lyric poem as well as of a story. The second question is answered when you are able to discern the role that the various characters play, and recount, in your own words, the key incidents and events in which they are involved. And the third question is answered when you are able to give a reasoned judgment about the poetical truth of the work. Is it a likely story? Does the work satisfy your heart and your mind? Do you appreciate the beauty of the work? In each case, can you say why?

The fourth question is, What of it? In the case of expository books, an answer to this question implies some kind of action on your part. "Action," here, does not always mean going out and doing something. We have suggested that that kind of action is an obligation for the reader when he agrees with a practical work—that is, agrees with the ends proposed—and accepts as appropriate the means by which the author says they can be attained. Action in this sense is not obligatory when the expository work is theoretical. There, mental action alone is required. But if you are convinced that such a book is true, in whole or part, then you must agree with its conclusions, and if they imply some adjustment of your views of the subject, then you are more or less required to make those adjustments.

Now it is important to recognize that, in the case of a work of imaginative literature, this fourth and final question must be interpreted quite differently. In a sense, the question is irrelevant to the reading of stories and poems. Strictly speaking, no action whatever is called for on your part when you have read a novel, play, or poem well—that is, analytically. You have discharged all of your responsibilities as a reader when you have applied the parallel rules of analytical reading to such works, and answered the first three questions.

We say "strictly speaking," because it is obvious that imaginative works have often led readers to act in various ways. Sometimes a story is a better way of getting a point across—be it a political, economic, or moral point—than an expository work making the same point. George Orwell's *Animal Farm* and his *1984* are both powerful attacks on totalitarianism. Aldous Huxley's *Brave New World* is an eloquent diatribe against the tyranny of technological progress. Alexander Solzhenitsyn's *The First Circle* tells us more about the petty cruelty and inhumanity of the Soviet bureaucracy than a hundred factual studies and reports. Such works have been banned and censored many times in the history of mankind, and the reason for that is clear. As E. B. White once remarked, "A despot doesn't fear eloquent writers preaching freedom—he fears a drunken poet who may crack a joke that will take hold."

Nevertheless, such practical consequences of the reading of stories and poems are not of the essence of the matter. Imaginative writings *can* lead to action, but they do not *have to.* They belong in the realm of fine art.

A work of fine art is “fine” not because it is “refined” or “finished,” but because it is an end (*finis,* Latin, means end) in itself. It does not move toward some result beyond itself. It is, as Emerson said of beauty, its own excuse for being.

Therefore, when it comes to applying this last question to works of imaginative literature, you should do so with caution. If you feel impelled because of a book you have read to go out and do something, ask yourself whether the work contains some implied statement that has produced this feeling. Poetry, properly speaking, is not the realm of statement, although many stories and poems have statements in them, more or less deeply buried. And it is quite right to take heed of them, and to react to them. But you should remember that you are then taking heed of and reacting to something other than the story or poem itself. That subsists in its own right. To read it well, all you have to do is experience it.

13. How to Read Stories

1. **Open How To read Fiction Books and Stories, Plays and Poems Folder. Choose and decide the Book. Listen and Apply one of the chosen Books:**
2. **Listen and Apply The Following Books on Stories, Plays, Poetry from Stories, Plays and Poems:**
    A. **How to read Poetry and understand Poetry.**
    B. **How To Read and Why.**
    C. **How to Read Poetry Like a Professor_ A Quippy and Sonorous Guide to Verse.**
    D. **How to Read World Literature (How to Study Literature).**
    E. **Literature_ An Introduction to Fiction, Poetry, and Drama_Includes 1995 Mla Guidlines.**
    F. **POETRY THE BASICS How do I read a poem_ Do I really understand poetry.**
    G. **Poetry For Dummies.**
    H. **Poetry for Students.**
    I. **Poetry for Students.**
    J. **Poetry the Basics.**
    K. **The Art of Poetry_ How to Read a Poem.**
    L. **Poetry Handbook.**
    M. **Theory into Poetry.**
    N. **Understanding Poetry_ An Anthology for College Students.**
    O. **Writing Poetry.**

The first piece of advice we would like to give you for reading a story is this: Read it quickly and with total immersion. Ideally, a story should be read at one sitting, although this is rarely possible for busy people with long novels. Nevertheless, the ideal should be approximated by compressing the reading of a good story into as short a time as feasible. Otherwise you will forget what happened, the unity of the plot will escape you, and you will be lost.

Some readers, when they really like a novel, want to savor it, to pause over it, to draw out the reading of it for as long as they can. But in this case they are probably not so much reading the book as satisfying their more or less unconscious feelings about the events and the characters. We will return to that in a moment.

Read quickly, we suggest, and with total immersion. We have indicated the importance of letting an imaginative book work on you. That is what we mean by the latter phrase. Let the characters into your mind and heart; suspend your disbelief, if such it is, about the events. Do not disapprove of something a character does before you understand why he does it—if then. Try as hard as you can to live in his world, not in yours; there, the things he does may be quite understandable. And do not judge the world as a whole until you are sure that you have "lived" in it to the extent of your ability.

Following this rule will allow you to answer the first question you should ask about any book—What is it about, as a whole? Unless you read it quickly you will fail to see the unity of the story. Unless you read intensely you will fail to see the details.

The terms of a story, as we have observed, are its characters and incidents. You must become acquainted with them, and be able to sort them out. But here a word of warning. To take *War and Peace* as an example, many readers start this great novel and are overwhelmed by the vast number of characters to whom they are introduced, especially since they all have strange-sounding names. They soon give up on the book in the belief that they will never be able to sort out all the complicated relationships, to know who is who. This is true of any big novel—and if a novel is really good, we want it to be as big as possible.

It does not always occur to such fainthearted readers that exactly the same thing happens to them when they move to a new town or part of a town, when they go to a new school or job, or even when they arrive at a party. They do not give up in those circumstances; they know that after a short while individuals will begin to be visible in the mass, friends will emerge from the faceless crowd of fellow-workers, fellow-students, or fellow-guests. We may not remember the names of everyone we met at a party, but we will recall the name of the man we talked to for an hour, or the girl with whom we made a date for the next evening, or the mother whose child goes to the same school as ours. The same thing happens in a novel. We should not expect to remember every character; many of them are merely background persons, who are there only to set off the actions of the main characters. However, by the time we have finished *War and Peace* or any big novel, we know who is important, and we do not forget. Pierre, Andrew, Natasha, Princess Mary, Nicholas—the names are likely to come immediately to memory, although it may have been years since we read Tolstoy's book.

We also, despite the plethora of incidents, soon learn *what* is important. Authors generally give a good deal of help in this respect; they do not want the reader to miss what is essential to the unfolding of the plot, so they flag it in various ways. But our point is that you should not be anxious if all is not clear from the beginning. Actually, it should *not* be clear then. A story is like life itself; in life, we do not expect to understand events as they occur, at least with total clarity, but looking back on them, we do understand. So the reader of a story, looking back on it after he has finished it, understands the relation of events and the order of actions.

All of this comes down to the same point: you must finish a story in order to be able to say that you have read it well. Paradoxically, however, a story ceases to be like life on its last page. Life goes on, but the story does not. Its characters have no vitality outside the book, and your imagination of what happens to them before the first page and after the last is only as good as the next reader's. Actually, all such speculations are meaningless. Preludes to *Hamlet* have been written, but they are ridiculous. We should not ask what happens to Pierre and Natasha after *War and Peace* ends. We are satisfied with Shakespeare's and Tolstoy's creations partly because they are limited in time. We need no more.

The great majority of books that are read are stories of one kind or another.
People who cannot read listen to stories. We even make them up for ourselves.
Fiction seems to be a necessity for human beings. Why is this?

One reason why fiction is a human necessity is that it satisfies many unconscious as well as conscious needs. It would be important if it only touched the conscious mind, as expository writing does. But fiction is important, too, because it also touches the unconscious.

On the simplest level—and a discussion of this subject could be very complex— we like or dislike certain kinds of people more than others, without always being sure why. If, in a novel, such people are rewarded or punished, we may have stronger feelings, either pro or con, about the book than it merits artistically.

For example, we are often pleased when a character in a novel inherits money, or otherwise comes into good fortune. However, this tends to be true only if the character is "sympathetic"—meaning that we can identify with him or her. We do not admit to ourselves that we would like to inherit the money, we merely say that we like the book.

Perhaps we would all like to love more richly than we do. Many novels are about love —most are, perhaps—and it gives us pleasure to identify with the loving characters. They are free, and we are not. But we may not want to admit this; for to do so might make us feel, consciously, that our own loves are inadequate.

Again, almost everyone has some unconscious sadism and masochism in his makeup. These are often satisfied in novels, where we can identify with either the conqueror or victim, or even with both. In each case, we are prone to say simply that we like "that kind of book"—without specifying or really knowing why.

Finally, we suspect that life as we know it is unjust. Why do good people suffer, and bad ones prosper? We do not know, we cannot know, but the fact causes great anxiety in everyone. In stories, this chaotic and unpleasant situation is adjusted, and that is extremely satisfying to us.

In stories—in novels and narrative poems and plays—justice usually does exist. People get what they deserve; the author, who is like a god to his characters, sees to it that they are rewarded or punished according to their true merit. In a good story, in a satisfying one, this is usually so, at least. One of the most irritating things about a bad story is that the people in it seem to be punished or rewarded with no rhyme or reason.

The great storyteller makes no mistakes. He is able to convince us that justice—poetic justice, we call it—has been done.

This is true even of high tragedy. There, terrible things happen to good men, but we see that the hero, even if he does not wholly deserve his fate, at least comes to understand it. And we have a profound desire to share his understanding. If we only *knew* —then we could withstand whatever the world has in store for us. “I Want to Know Why” is the title of a story by Sherwood Anderson. It could be the title of many stories. The tragic hero does learn why, though often, of course, only after the ruin of his life. We can share his insight without sharing his suffering.

Thus, in criticizing fiction we must be careful to distinguish those books that satisfy our own particular unconscious needs—the ones that make us say, “I like this book, although I don’t really know why”—from those that satisfy the deep unconscious needs of almost everybody. The latter are undoubtedly the great stories, the ones that live on and on for generations and centuries. As long as man is man, they will go on satisfying him, giving him something that he needs to have—a belief in justice and understanding and the allaying of anxiety. We do not know, we cannot be sure, that the real world is good. But the world of a great story *is* somehow good. We want to live there as often and as long as we can.

A Note About Epics

Perhaps the most honored but probably the least read books in the great tradition of the Western World are the major epic poems, particularly the *Iliad* and *Odyssey* of Homer, Virgil’s *Aeneid,* Dante’s *Divine Comedy,* and Milton’s *Paradise Lost.* This paradox requires some comment.

Judging by the very small number that have been completed successfully in the past 2,500 years, a long epic poem is apparently the most difficult thing a man can write. This is not for want of trying; hundreds of epics have been begun, and some —for example, Wordsworth’s *Prelude* and Byron’s *Don Juan*—have grown to extensive proportions without ever really being finished. So honor is due the poet who sticks to the task and completes it. Greater honor is due him if he produces a work that has the qualities of the five just mentioned. But they are certainly not easy to read.

This is not only because they are written in verse—for in every case except that of *Paradise Lost,* prose translations are available to us. The difficulty seems rather to lie in their elevation, in their approach to their subject matter. Any of these major epics exerts enormous demands on the reader—demands of attention, of involvement, and of imagination. The effort required to read them is very great indeed.

Most of us are not aware of the loss we suffer by not making that effort. For the rewards to be gained from a good reading—an analytical reading, as we should say —of

these epics are at least as great as those to be gained from the reading of any other books, certainly any other works of fiction. Unfortunately, however, these rewards are not gained by readers who do less than a good job on these books.

We hope that you will take a stab at reading these five great epic poems, and that you will manage to get through all of them. We are certain you will not be disappointed if you do. And you will be able to enjoy a further satisfaction. Homer, Virgil, Dante, and Milton—they are the authors that every good poet, to say nothing of other writers, has read. Along with the Bible, they constitute the backbone of any serious reading program.

14. How to Read Plays

1. **Open How To read Fiction Books and Stories, Plays and Poems Folder. Choose and decide the Book. Listen and Apply one of the chosen Books:**
2. **Listen and Apply The Following Books on Stories, Plays, Poetry from Stories, Plays and Poems:**
    A. **How to read Poetry and understand Poetry.**
    B. **How To Read and Why.**
    C. **How to Read Poetry Like a Professor_ A Quippy and Sonorous Guide to Verse.**
    D. **How to Read World Literature (How to Study Literature).**
    E. **Literature_ An Introduction to Fiction, Poetry, and Drama_Includes 1995 Mla Guidlines.**
    F. **POETRY THE BASICS How do I read a poem_ Do I really understand poetry.**
    G. **Poetry For Dummies.**
    H. **Poetry for Students.**
    I. **Poetry for Students.**
    J. **Poetry the Basics.**
    K. **The Art of Poetry_ How to Read a Poem.**
    L. **Poetry Handbook.**
    M. **Theory into Poetry.**
    N. **Understanding Poetry_ An Anthology for College Students.**
    O. **Writing Poetry.**

A play is fiction, a story, and insofar as that is true, it should be read like a story. Perhaps the reader has to be more active in creating the background, the world in which the characters live and move, for there is no description in plays such as abounds in novels. But the problems are essentially similar.

However, there is one important difference. When you read a play, you are not reading a *complete* work. The complete play (the work that the author intended you to apprehend) is only apprehended when it is acted on a stage. Like music, which must be heard, a play lacks a physical dimension when we read it in a book. The reader must supply that dimension.

The only way to do that is to make a pretense of seeing it acted. Therefore, once you have discovered what the play is about, as a whole and in detail, and once you have answered the other questions you must ask about any story, then try *directing* the play.

Imagine that you have half a dozen good actors before you, awaiting your commands. Tell them how to say this line, how to play that scene. Explain the importance of these few words, and how that action is the climax of the work. You will have a lot of fun, and you will learn a lot about the play.

An example will show what we mean. In *Hamlet,* Act II, Scene ii, Polonius announces to the king and queen that Hamlet is insane because of his love for Ophelia, who has spurned the prince's advances. The king and queen are doubtful, whereupon Polonius proposes that the king and he hide behind an arras, in order to overhear a conversation between Hamlet and Ophelia. This proposal occurs in Act II, Scene ii, at lines 160–170; immediately thereafter Hamlet enters, reading. His speeches to Polonius are enigmatic; as Polonius says, "though this be madness, yet there is method in't!" Later on, early in Act III, Hamlet enters and delivers the famous soliloquy, beginning "To be or not to be," and then is interrupted by catching sight of Ophelia. He speaks to her quite reasonably for a time, but suddenly he cries: "Ha, ha! are you honest?" (III, i, line 103). Now the question is, has Hamlet overheard Polonius say earlier that he and the king planned to spy on him? And did he perhaps also hear Polonius say that he would "loose my daughter to him"? If so Hamlet's conversations with both Polonius and Ophelia would mean one thing; if he did not overhear the plotting, they would mean another. Shakespeare left no stage directions; the reader (or director) must decide for himself. Your own decision will be central to your understanding of the play.

Many of Shakespeare's plays require this kind of activity on the part of the reader. Our point is that it is always desirable, no matter how explicit the playwright was in telling us exactly what we should expect to see. (We cannot question what we are to hear, since the play's words are before us.) Probably you have not read a play really well until you have pretended to put it on the stage in this way. At best, you have given it only a partial reading.

Earlier, we suggested that there were interesting exceptions to the rule that the playwright cannot speak directly to the reader as the author of a novel can and often does. (Fielding, in *Tom Jones,* is an example of this direct addressing of the reader in one great novel.) Two of these exceptions are separated by nearly twenty-five centuries of time. Aristophanes, the ancient Greek comic playwright, wrote the only examples of what is called Old Comedy that survive. From time to time in an Aristophanic play, and always at least once, the leading actor would step out of character, perhaps move forward toward the audience, and deliver a political speech that had nothing whatever to do with the action of the drama. It is felt that these speeches were expressions of the author's personal feelings. This is occasionally done nowadays—no useful artistic device is ever really lost—but perhaps not as effectively as Aristophanes did it.

The other example is that of Shaw, who not only expected his plays to be acted but also hoped that they would be read. He published them all, at least one (*Heartbreak House*) before it was ever acted, and accompanied the publication with long prefaces in which he explained the meaning of the plays and told his readers how to understand them. (He also included very extensive stage directions in the published versions.) To read a

Shavian play without reading the preface Shaw wrote for it is to turn one's back intentionally on an important aid to understanding. Again, other modern playwrights have imitated Shaw in this device, but never as effectively as he did.

One other bit of advice may be helpful, particularly in reading Shakespeare. We have already suggested the importance of reading the plays through, as nearly as possible at one sitting, in order to get a feel for the whole. But, since the plays are mostly in verse, and since the verse is more or less opaque in places because of changes in the language that have occurred since 1600, it is often desirable to read a puzzling passage out loud. Read slowly, as if an audience were listening, and with "expression"—that is, try to make the words meaningful to you as you read them. This simple device will clear up many difficulties. Only after it has failed should you turn to the glossary or notes.

A Note About Tragedy

Most plays are not worth reading. This, we think, is because they *are* incomplete. They were not meant to be read—they were meant to be acted. There are many great expository works, and many great novels, stories, and lyric poems, but there are only a few great plays. However, those few—the tragedies of Aeschylus, Sophocles, and Euripides, the plays of Shakespeare, Molière's comedies, the works of a very few moderns —are very great indeed, for they contain within them some of the deepest and richest insights men have ever expressed in words.

Among these, Greek tragedy is probably the toughest nut to crack for beginning readers. For one thing, in the ancient world three tragedies were presented at one time, the three often dealing with a common theme, but except in one case (the *Oresteia* of Aeschylus) only single plays (or acts) survive. For another, it is almost impossible to stage the plays mentally, since we know almost nothing about how the Greek directors did it. For still another, the plays often are based on stories that were well known to their audiences but are known to us only through the plays. It is one thing to know the story of Oedipus, for example, as well as we know the story of George Washington and the Cherry Tree, and thus to view Sophocles' masterpiece as a commentary on a familiar tale; and it is quite another to see *Oedipus Rex* as the primary story and try to imagine the familiar tale that provided the background.

Nevertheless, the plays are so powerful that they triumph over even these obstacles, as well as others. It is important to read them well, for they not only can tell us much about life as we still live it, but they also form a kind of literary framework for many other plays written much later—for example, Racine's and O'Neill's. We have two bits of advice that may help.

The first is to remember that the essence of tragedy is time, or rather the lack of it. There is no problem in any Greek tragedy that could not have been solved if there had been enough time, but there is never enough. Decisions, choices have to be made in a moment, there is no time to think and weigh the consequences; and, since even tragic

heroes are fallible—especially fallible, perhaps—the decisions are wrong. It is easy for us to see what should have been done, but would we have been able to see in time? That is the question that you should always ask in reading any Greek tragedy.

The second bit of advice is this. One thing we do know about the staging of Greek plays is that the tragic actors wore buskins on their feet that elevated them several inches above the ground. (They also wore masks.) But the members of the chorus did not wear buskins, though they sometimes wore masks. The comparison between the size of the tragic protagonists, on the one hand, and the members of the chorus, on the other hand, was thus highly significant. Therefore you should always imagine, when you read the words of the chorus, that the words are spoken by persons of your own stature; while the words spoken by the protagonists proceed from the mouths of giants, from personages who did not only seem, but actually were, larger than life.

15. How to Read Lyric Poetry.

1. **Open How To read Fiction Books and Stories, Plays and Poems Folder. Choose and decide the Book. Listen and Apply one of the chosen Books:**
2. **Listen and Apply The Following Books on Stories, Plays, Poetry from Stories, Plays and Poems:**
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The simplest definition of poetry (in the somewhat limited sense implied by the title of this section) is that it is what poets write. That seems obvious enough, and yet there are those who would dispute the definition. Poetry, they hold, is a kind of spontaneous overflowing of the personality, which may be expressed in written words but may also take the form of physical action, or more or less musical sound, or even just feeling. There is something to this, of course, and poets have always recognised it. It is a very old notion that the poet reaches down deep into himself to produce his poems, that their place of origin is a mysterious “well of creation” within the mind or soul. In this sense of the term, poetry can be made by anyone at any time, in a kind of solitary sensitivity session. But although we admit that there is a kernel of truth in this definition, the meaning of the term that we will be employing in what follows is much narrower. Whatever may be the origin of the poetic impulse, poetry, for us, consists of words, and what is more, of words that are arranged in a more or less orderly and disciplined way.

Other definitions of the term that similarly contain a kernel of truth are that poetry (again, primarily lyric poetry) is not truly poetry unless it praises, or unless it rouses to action (usually revolutionary), or unless it is written in rhyme, or unless it employs a specialized language that is called “poetic diction.” In that sentence we have intentionally mixed together some very modern and some very antiquated notions. Our point is that all of these definitions, and a dozen more that we might mention, are too narrow, just as the definition discussed in the last paragraph was too broad (for us).

Between such very broad and such very narrow definitions lies a central core that most people, if they were feeling reasonable about the matter, would admit was poetry. If we tried to state precisely what the central core consisted in, we would probably get into trouble, and so we will not try. Nevertheless, we are certain that you know what we mean. We are certain that nine times out of ten, or perhaps even ninety-nine times out of a hundred, you would agree with us that X was a poem and Y was not. And that is fully sufficient for our purposes in the following pages.

Many people believe that they cannot read lyric poetry—especially modern poetry. They think that it is often difficult, obscure, complex, and that it demands so much attention, so much work on their part, that it is not worthwhile. We would say two things. First, lyric poetry, even modern poetry, does not always demand as much work as you may think if you go about reading it in the right way. Second, it is often worth whatever effort you are willing to spend.

We do not mean that you should not work on a poem. A good poem can be worked at, re-read, and thought about over and over for the rest of your life. You will never stop finding new things in it, new pleasures and delights, and also new ideas about yourself and the world. We mean that the initial task of bringing a poem close enough to you to work on it is not as hard as you may have believed.

The first rule to follow in reading a lyric is to read it through without stopping, whether you think you understand it or not. This is the same rule that we have suggested for many different kinds of books, but it is more important for a poem than it is for a philosophical or scientific treatise, and even for a novel or play.

In fact, the trouble so many people seem to have in reading poems, especially the difficult modern ones, stems from their unawareness of this first rule of reading them. When faced by a poem of T. S. Eliot or Dylan Thomas or some other “obscure” modern, they plunge in with a will, but are brought up short by the first line or stanza. They do not understand it immediately and in its entirety, and they think they should. They puzzle over the words, try to unwind the complicated skein of the syntax, and soon give up, concluding that, as they suspected, modern poetry is just too difficult for them.

It is not only modern lyrics that are difficult. Many of the best poems in the language are complicated and involved in their language and thought. Besides, many apparently simple poems have immense complexity under the surface.

But any good lyric poem has a unity. Unless we read all of it, and all at once, we cannot comprehend its unity. We cannot discover, except possibly by accident, the basic feeling or experience that underlies it. In particular, the essence of a poem is almost never to be found in its first line, or even in its first stanza. It is to be found only in the whole, and not conclusively in any part.

The second rule for reading lyrics is this: Read the poem through again—but read it *out loud.* We have suggested this before, in the case of poetic dramas like Shakespeare's. There it was helpful; here it is essential. You will find, as you read the poem out loud, that the very act of speaking the words forces you to understand them better. You cannot glide over a misunderstood phrase or line quite so easily if you are speaking it. Your ear is offended by a misplaced emphasis that your eyes might miss. And the rhythm of the poem, and its rhymes, if it has them, will help you to understand by making you place the emphasis where it belongs. Finally, you will be able to open yourself to the poem, and let it work on you, as it should.

In the reading of lyrics, these first two suggestions are more important than anything else. We think that if readers who believe they cannot read poems would obey these rules first, they would have little difficulty afterwards. For once you have apprehended a poem in its unity, even if this apprehension is vague, you can begin to ask it questions. And as with expository works, that is the secret of understanding.

The questions you ask of an expository work are grammatical and logical. The questions you ask of a lyric are usually rhetorical, though they may also be syntactical. You do not come to terms with a poem; but you must discover the key words. You discover them not primarily by an act of grammatical discernment, however, but by an act of rhetorical discernment. Why do certain words pop out of the poem and stare you in the face? Is it because the rhythm marks them? Or the rhyme? Or are the words repeated? Do several stanzas seem to be about the same ideas; if so, do these ideas form any kind of sequence? Anything of this sort that you can discover will help your understanding.

In most good lyrics there is some kind of conflict. Sometimes two antagonists— either individual people, or images, or ideas—are named, and then the conflict between them is described. If so, this is easy to discover. But often the conflict is only implied and not stated. For example, a large number of great lyric poems—perhaps even the majority of them—are about the conflict between love and time, between life and death, between the beauty of transient things and the triumph of eternity. But these words may not be mentioned in the poem itself.

It has been said that almost all of Shakespeare's sonnets are about the ravages of what he calls "Devouring time." It is clear that some of them are, for he explicitly says so again and again.

When I have seen by
Time's fell hand
defaced The rich-proud
cost of outworn buried
age

he writes in the 64th sonnet and lists other victories that time gains over all that man wishes were proof against it. Then he says:

Ruin hath taught me thus to ruminate,
That Time will come and take my love away.

There is no question what that sonnet is about. Similarly with the famous 116th sonnet, which contains these lines:

Love's not Time's fool, though rosy lips and cheeks
Within his bending sickle's compass come;
Love alters not with his brief hours and weeks,
But bears it out even to the edge of doom.

But the almost equally famous 138th sonnet, which begins with the lines:

When my love swears
that she is made of truth
I do believe her, though
I know she lies, is also
about the conflict
between love and time,
although the word "time"
appears nowhere in the
poem.

That you will see without much difficulty. Nor is there any difficulty in seeing that Marvell's celebrated lyric "To His Coy Mistress" is about the same subject, for he makes this clear right at the beginning:

Had we but world enough, and time,
This coyness, lady, were no crime.

We do not have all the time in the world, Marvell says—for

. . . at my back I always hear
Time's wingèd chariot hurrying near;
And yonder all before us lie
Deserts of vast eternity.

Therefore, he adjures his mistress,

Let us roll all our strength and all
Our sweetness up into one ball,
And tear our pleasures with rough strife
Thorough the iron gates of life.
Thus, though we cannot make our sun
Stand still, yet we will make him run.

It is perhaps a bit harder to see that the subject of "You, Andrew Marvell," by Archibald MacLeish, is exactly the same. The poem begins:

And here face down beneath the sun
And here upon earth's noonward height
To feel the always coming on
The always rising of the night

Thus MacLeish asks us to imagine someone (the poet? the speaker? the reader?) as lying in the noonday sun—but all the same, in the midst of that brightness and warmth, aware of "the earthly chill of dusk." He imagines the line of the shadow of the setting sun—of all the cumulative successive setting suns of history—moving across the world, across Persia, and Baghdad . . . he feels "Lebanon fade out and Crete," "And Spain go under and the shore / Of Africa the gilded sand," and . . . "now the long light on the sea" vanishes, too. And he concludes:

And here face downward in the sun
To feel how swift, how secretly,
The shadow of the night comes on. . . .

The word "time" is not used in the poem, nor is there any mention of a lover. Nevertheless, the title reminds us of Marvell's lyric with its theme of "Had we but world enough and time," and thus the combination of the poem itself and its title invokes the same conflict, between love (or life) and time, that was the subject of the other poems we have considered here.

One final piece of advice about reading lyric poems. In general, readers of such works feel that they must know more about the authors and their times than they really have to. We put much faith in commentaries, criticism, biographies—but this may be only because we doubt our own ability to read. Almost everyone can read any poem, if he will go to work on it. Anything you discover about an author's life or times is valid and may be helpful. But a vast knowledge of the context of a poem is no guarantee that the poem itself will be

understood. To be understood it must be read—over and over. Reading any great lyric poem is a lifetime job—not, of course, in the sense that it should go on and on throughout a lifetime, but rather that as a great poem, it deserves many return visits. And during vacations from a given poem, we may learn more about it than we realise.

Books That Will Not Be Continually Analyse

If The Books are:

1. Imaginative Literature
2. Stories
3. Plays
4. Tragedy
5. Lyric Poetry
6. Poems

These Books are being analysed in Kinds of Books from 11-15, by using different type of Books to analyse these type of Genre of the books.

If The Books Non Fiction, Continually Analyse

If The book are:

1. Practical Book
2. Theoretical Book
3. Historical Book
4. Biographical Book
5. Autobiographical Book
6. Current Event
7. Science Book
8. Mathematical Book
9. Finance Book
10. Economic Book
11. Philosophy Book
12. Theology Book
13. Canonical Book
14. Religious Book
15. Social Science Book
16. Any Other Non Fiction

If The Books Non Fiction, then continually analyse the books, and follow below the steps of the analysis of the book

X-raying a Book

Every book has a skeleton hidden between its covers. Your job as an analytical reader is to find it.

A book comes to you with flesh on its bare bones and clothes over its flesh. It is all dressed up. You do not have to undress it or tear the flesh off its limbs to get at the firm structure that underlies the soft surface. But you must read the book with X-ray eyes, for it is an essential part of your apprehension of any book to grasp its structure.

Recognition of the need to see the structure of a book leads to the discovery of the second and third rules for reading any book. We say "any book." These rules apply to poetry as well as to science, and to any kind of expository work. Their application will be different, of course, according to the kind of book they are used on. The unity of a novel is not the same as the unity of a treatise on politics; nor are the parts of the same sort, or ordered in the same way. But every book without exception that is worth reading at all has a unity and an organization of parts. A book that did not would be a mess. It would be relatively unreadable, as bad books actually are.

We will state these two rules as simply as possible. Then we will explain and illustrate them.

RULE 2. STATE THE UNITY OF THE WHOLE BOOK IN A SINGLE SENTENCE, OR AT MOST A FEW SENTENCES (A SHORT PARAGRAPH). This means that you must say what the whole book is about as briefly as possible. To say what the whole book is about is not the same as saying what kind of book it is. (That was covered by Rule 1.) The word "about" may be misleading here. In one sense, a book is *about* a certain type of subject matter, which it treats in a certain way. If you know this, you know what *kind* of book it is. But there is another, more colloquial sense of "about." We ask a person what he is about, what he is up to. So we can wonder what an author is up to, what he is trying to do. To find out what a book is about in this sense is to discover its *theme* or main *point.*

A book is a work of art. (Again, we want to warn you against too narrow a conception of "art." We do not mean, or we do not only mean, "fine art" here. A book is the product of someone who has a certain skill in making. He is a maker of books and he has made one here for our benefit.) In proportion as it is good, as a book and as a work of art, it has a more nearly perfect, a more pervasive unity. This is true of music and paintings, of novels and plays; it is no less true of books that convey knowledge.

But it is not enough to acknowledge this fact vaguely. You must apprehend the unity with definiteness. There is only one way to know that you have succeeded. You must be able to tell yourself or anybody else what the unity is, and in a few words. (If it requires too many words, you have not seen the unity but a multiplicity.) Do not be satisfied with "feeling the unity" that you cannot express. The reader who says, "I know what it is, but I just can't say it," probably does not even fool himself.

RULE 3. SET FORTH THE MAJOR PARTS OF THE BOOK, AND SHOW HOW THESE ARE ORGANISED INTO A WHOLE, BY BEING ORDERED TO ONE ANOTHER AND TO THE UNITY OF THE WHOLE.

The reason for this rule should be obvious. If a work of art were absolutely simple, it would, of course, have no parts. But that is never the case. None of the sensible, physical things man knows is simple in this absolute way, nor is any human production. They are all complex unities. You have not grasped a complex unity if all you know about it is *how it is one.* You must also know *how it is many,* not a many that consists of a lot of separate things, but an organized many. If the parts were not organically related, the whole that they composed would not be one. Strictly speaking, there would be no whole at all but merely a collection.

There is a difference between a heap of bricks, on the one hand, and the single house they can constitute, on the other. There is a difference between a single house and a collection of houses. A book is like a single house. It is a mansion having many rooms, rooms on different levels, of different sizes and shapes, with different outlooks, with different uses. The rooms are independent, in part. Each has its own structure and interior decoration. But they are not absolutely independent and separate. They are connected by doors and arches, by corridors and stairways, by what architects call a “traffic pattern.” Because they are connected, the partial function that each performs contributes its share to the usefulness of the whole house. Otherwise the house would not be livable.

The analogy is almost perfect. A good book, like a good house, is an orderly arrangement of parts. Each major part has a certain amount of independence. As we will see, it may have an interior structure of its own, and it may be decorated in a different way from other parts. But it must also be connected with the other parts— that is, related to them functionally—for otherwise it would not contribute its share to the intelligibility of the whole.

As houses are more or less livable, so books are more or less readable. The most readable book is an architectural achievement on the part of the author. The best books are those that have the most intelligible structure. Though they are usually more complex than poorer books, their greater complexity is also a greater simplicity, because their parts are better organized, more unified.

That is one of the reasons why the best books are also the most readable. Lesser works are really more bothersome to read. Yet to read them well—that is, as well as they can be read—you must try to find some plan in them. They would have been better books if their authors had themselves seen the plan a little more clearly. But if they hang together at all, if they are a complex unity to any degree and not mere collections, there must be a plan and you must find it.

Of Plots and Plans: Stating the Unity of a Book

Let us return now to the second rule, which requires you to state the unity of a book. A few illustrations of the rule in operation may guide you in putting it into practice.

Let us begin with a famous case. You probably read Homer's *Odyssey* in school. If not, you must know the story of Odysseus, or Ulysses, as the Romans call him, the man who took ten years to return from the siege of Troy only to find his faithful wife Penelope herself besieged by suitors. It is an elaborate story as Homer tells it, full of exciting adventures on land and sea, replete with episodes of all sorts and many complications of plot. But it also has a single unity of action, a main thread of plot that ties everything together.

Aristotle, in his *Poetics,* insists that this is the mark of *every* good story, novel, or play. To support his point, he shows how the unity of the *Odyssey* can be summarized in a few sentences.

> A certain man is absent from home for many years; he is jealously watched by Poseidon, and left desolate. Meanwhile his home is in a wretched plight; suitors are wasting his substance and plotting against his son. At length, tempest-tossed, he himself arrives; he makes certain persons acquainted with him; he attacks the suitors with his own hand, and is himself preserved while he destroys them.

"This," says Aristotle, "is the essence of the plot; the rest is episode."

After you know the plot in this way, and through it the unity of the whole narrative, you can put the parts into their proper places. You might find it a good exercise to try this with some novels you have read. Try it on some good ones, such as Fielding's *Tom Jones* or Dostoevsky's *Crime and Punishment* or Joyce's modern *Ulysses.* The plot of *Tom Jones,* for instance, can be reduced to the familiar formula: Boy meets girl, boy loses girl, boy gets girl. That, indeed, is the plot of every romance. To recognize this is to learn what it means to say that there are only a small number of plots in the world. The difference between good and bad stories having the same essential plot lies in what the author does with it, how he dresses up the bare bones.

You do not always have to find out the unity of a book all by yourself. The author often helps you. Sometimes, the title is all you have to read. In the eighteenth century, writers had the habit of composing elaborate titles that told the reader what the whole book was about. Here is a title by Jeremy Collier, an English divine who attacked what he considered to be the obscenity—we would say pornography, perhaps—of Restoration drama much more learnedly than is customary nowadays: *A Short View of the Immorality and Profaneness of the English Stage, together with the Sense of Antiquity upon this Argument.* You can guess from this that Collier recites many flagrant instances of the abuse of morals and that he supports his protest by quoting texts from those ancients who argued, as Plato did, that the stage corrupts youth, or, as the early Church fathers did, that plays are seductions of the flesh and the devil.

Sometimes the author tells you the unity of his plan in his preface. In this respect, expository books differ radically from fiction. A scientific or philosophical writer has no reason to keep you in suspense. In fact, the less suspense he keeps you in, the more likely you are to sustain the effort of reading his work through. Like a newspaper article, an expository book may summarize itself in its first paragraph.

Do not be too proud to accept the author's help if he proffers it, but do not rely too completely on what he says in the preface, either. The best-laid plans of authors, like those of mice and other men, often go awry. Be guided by the prospectus the author gives you, but always remember that the obligation of finding the unity belongs finally to the reader, as much as the obligation of having one belongs to the writer. You can discharge that obligation honestly only by reading the whole book.

The introductory paragraph of Herodotus' history of the war between the Greeks and the Persians provides an excellent summary of the whole. It runs:

> These are the researches of Herodotus of Halicarnassus, which he publishes, in the hope of thereby preserving from decay the remembrance of what men have done, and of preventing the great and wonderful actions of the Greeks and the Barbarians from losing their due meed of glory; and withal to put on record what were their grounds of feud.

That is a good beginning for you as a reader. It tells you succinctly what the whole book is about.

But you had better not stop there. After you have read the nine parts of Herodotus' history through, you will probably find it necessary to elaborate on that statement to do justice to the whole. You might want to mention the Persian kings —Cyrus, Darius, and Xerxes; the Greek heroes of the war—primarily Themistocles; and the major events—the crossing of the Hellespont and the decisive battles, notably Thermopylae and Salamis.

All the rest of the fascinating details, with which Herodotus richly prepares you for his climax, can be left out of your summary of the plot. Note, here, that the unity of a history is a single thread of plot, very much as in fiction. So far as unity is concerned, this rule of reading elicits the same kind of answer in history and in fiction.

A few more illustrations may suffice. Let us take a practical book first. The unity of Aristotle's *Ethics* can be stated thus:

> This is an inquiry into the nature of human happiness and an analysis of the conditions under which happiness may be gained or lost, with an indication of what men must do in their conduct and thinking in order to become happy or to avoid unhappiness, the principal emphasis being placed on the cultivation of the virtues, both moral and intellectual,

> although other goods are also recognized as necessary for happiness, such as wealth, health, friends, and a just society in which to live.

Another practical book is Adam Smith's *The Wealth of Nations.* Here the reader is aided by the author's own statement of "the plan of the work" at the very beginning. But that takes several pages. The unity can be more briefly stated as follows:

> This is an inquiry into the source of national wealth in any economy that is built on a division of labor, considering the relation of the wages paid labor, the profits returned to capital, and the rent owed the landowner, as the prime factors in the price of commodities. It discusses the various ways in which capital can be more or less gainfully employed, and relates the origin and use of money to the accumulation and employment of capital. Examining the development of opulence in different nations and under different conditions, it compares the several systems of political economy, and argues for the beneficence of free trade.

If a reader grasped the unity of *The Wealth of Nations* in this way, and did a similar job for Marx's *Das Kapital,* he would be well on the way toward seeing the relation between two of the most influential books of the past two centuries.

Darwin's *The Origin of Species* provides us with a good example of the unity of a theoretical book in science. Here is a statement of it:

> This is an account of the variation of living things during the course of countless generations and the way in which this results in new groupings of plants and animals; it treats both of the variability of domesticated animals and of variability under natural conditions, showing how such factors as the struggle for existence and natural selection operate to bring about and sustain such groupings; it argues that species are not fixed and immutable groups, but that they are merely varieties in transition from a less to a more marked and permanent status, supporting this argument by evidences from extinct animals found in the earth's crust, and from comparative embryology and anatomy.

That may seem like a big mouthful, but the book was an even bigger one for a great many readers in the nineteenth century, partly because they did not go to the trouble of finding out what it was really about.

Finally, let us take Locke's *Essay Concerning Human Understanding* as a theoretical book in philosophy. You may recall our observing that Locke himself summarized his work by saying that it was "an inquiry into the origin, certainty and extent of human knowledge, together with the grounds and degrees of belief, opinion and assent." We would not quarrel with so excellent a statement of plan by the author, except to add two subordinate

qualifications to do justice to the first and third parts of the essay: it will be shown, we would add, that there are no innate ideas, but that all human knowledge is acquired from experience; and language will be discussed as a medium for the expression of thought, its proper use and most familiar abuses to be indicated.

There are two things we want you to note before we proceed. The first is how frequently you can expect the author, especially a good one, to help you to state the plan of his book. Despite that fact, most readers are at a total loss if you ask them to say briefly what the whole book is about. Partly this is owing to the widespread inability to speak concise English sentences. Partly it is owing to neglect of this rule in reading. But it also indicates that many readers pay as little attention to the author's introductory words as they ordinarily do to his title.

The second point is a word of caution. Do not take the sample summaries we have given you as if they were, in each case, a final and absolute formulation of the book's unity. A unity can be variously stated. There is no one right way to do it. One statement is better than another, of course, in proportion as it is brief, accurate, and comprehensive. But quite different statements may be equally good, or equally bad.

We have here sometimes stated the unity of a book quite differently from the author's expression of it, and without apologies to him. You may differ similarly from us. After all, a book is something different to each reader. It would not be surprising if that difference expressed itself in the way the reader stated its unity. This does not mean, however, that anything goes. Though readers are different, the book is the same, and there can be an objective check upon the accuracy and fidelity of the statements anyone makes about it.

Mastering the Multiplicity: The Art of Outlining a Book

Let us turn now to the other structural rule, the rule that requires us to set forth the major parts of the book in their order and relation. This third rule is closely related to the second. A well-stated unity indicates the major parts that compose the whole; you cannot comprehend a whole without somehow seeing its parts. But it is also true that unless you grasp the organisation of its parts, you cannot know the whole comprehensively.

Why, then, make two rules here instead of one? It is primarily a matter of convenience. It is easier to grasp a complex and unified structure in two steps than in one. The second rule directs your attention toward the unity, the third toward the complexity, of a book. There is another reason for the separation. The major parts of a book may be seen at the moment when you grasp its unity. But these parts are themselves usually complex and have an interior structure you must see. Hence the third rule involves more than just an enumeration of the parts. It means outlining them, that is, treating the parts as if they were subordinate wholes, each with a unity and complexity of its own.

A formula can be stated for operating according to this third rule. It will guide you in a general way. According to the second rule, we had to say: The whole book is about so and so and such and such. That done, we might obey the third rule by proceeding as follows: (1) The author accomplished this plan in five major parts, of which the first part is about so and so, the second part is about such and such, the third part is about this, the fourth part about that, and the fifth part about still another thing. (2) The first of these major parts is divided into three sections, of which the first considers X, the second considers Y, and the third considers Z. (3) In the first section of the first part, the author makes four points, of which the first is A, the second B, the third C, and the fourth D. And so on and so forth.

You may object to this much outlining. It would take a lifetime to read a book that way. But of course this is only a formula. The rule looks as if it required an impossible amount of work from you. In fact, the good reader does this sort of thing habitually, and hence easily and naturally. He may not write it all out. He may not even at the time of reading have made it all verbally explicit. But if he were called upon to give an account of the structure of the book, he would do something that approximated the formula we have described.

The word “approximation” should relieve your anxiety. A good rule always describes the ideal performance. But a person can be skilled in an art without being the ideal artist. He can be a good practitioner if he merely approximates the rule. We have stated the rule here for the ideal case. You should be satisfied if you make a very rough approximation to what is required.

Even when you become more skilled, you will not want to read every book with the same degree of effort. You will not find it profitable to expend all your skill on some books. Even the best readers try to make a fairly close approximation to the requirements of this rule for only a relatively few books. For the most part, they are satisfied with a rough notion of the book’s structure. The degree of approximation varies with the character of the book and your purpose in reading it. Regardless of this variability, the rule remains the same. You must know how to follow it, whether you follow it closely or only in a rough fashion.

You should understand that the limitations on the degree to which you can approximate the rule are not only ones of time and effort. You are a finite, mortal creature; but a book is also finite and, if not mortal, at least defective in the way all things made by man are. No book deserves a perfect outline because no book is perfect. It goes only so far, and so must you. This rule, after all, does not call for your putting things into the book that the author did not put there. Your outline is of the book itself, not the subject matter that the book is about. Perhaps the outline of a subject matter could be extended indefinitely, but not your outline of the book, which gives the subject matter only more or less definitive treatment. Hence you should not feel that we are urging you merely to be lazy about following this rule. You could not follow it out to the bitter end even if you wanted to.

The forbidding aspect of the formula for setting forth the order and relation of the parts may be somewhat lessened by a few illustrations of the rule in operation. Unfortunately, it

is more difficult to illustrate this rule than the other one about stating the unity. A unity, after all, can be stated in a sentence or two, at most a short paragraph. But in the case of a large and complex book, a careful and adequate outline of the parts, and their parts, and *their* parts down to the least structural unit that is comprehensible and worthwhile identifying, would take a great many pages to write out.

Theoretically, the outline could be longer than the original. Some of the great medieval commentaries on the works of Aristotle *are* longer than the works they comment on. They include, of course, more than an outline, for they undertake to interpret the author sentence by sentence. The same is true of certain modern commentaries, such as the great ones on Kant's *Critique of Pure Reason.* And a variorum edition of a Shakespeare play, which includes an exhaustive outline as well as other things, is many times as long—perhaps ten times as long—as the original. You might look into a commentary of this sort if you want to see the rule followed as close to perfection as man can do. Aquinas, for instance, begins each section of his commentary with a beautiful outline of the points that Aristotle has made in a particular part of his work; and he always says explicitly how that part fits the structure of the whole, especially in relation to the parts that come before and after.

Let us take something easier than a treatise of Aristotle. Aristotle is probably the most compact of prose writers; you would expect that an outline of one of his works would be extensive and difficult. Let us also agree that, for the sake of the example, we will not carry the process out to the relative perfection that would be possible if we had a great number of pages available.

The United States Constitution is an interesting, practical document, and a very well-organized piece of writing. If you examine it, you should have no difficulty in finding its major parts. They are pretty clearly indicated, though you have to do some thinking to make the main divisions. Here is a suggested outline of the document:

FIRST: The Preamble, setting forth the purpose(s) of the Constitution;

SECOND: The first Article, dealing with the legislative department of the government;

THIRD: The second Article, dealing with the executive department of the government;

FOURTH: The third Article, dealing with the judicial department of the government;

FIFTH: The fourth Article, dealing with the relationship between the state governments and the federal government;

SIXTH: The fifth, sixth, and seventh Articles, dealing with the amendment of the Constitution, its status as the supreme law of the land, and provisions for its ratifications;

SEVENTH: The first ten amendments, constituting the Bill of Rights;

EIGHTH: The remaining amendments up to the present day.

Those are the major divisions. Now let us outline one of them, the *Second,* comprising the Constitution's first Article. Like most of the other Articles, it is divided into Sections. Here is a suggested outline.

II, 1: Section 1, establishing legislative powers in a Congress of the United States, divided into two bodies, a Senate and a House of Representatives;

II, 2: Sections 2 and 3, respectively describing the composition of the House and Senate and stating the qualifications of members. In addition, it is stated that the House has the sole power of impeachment, while the Senate has the sole power of trying impeachments;

II, 3: Sections 4 and 5, having to do with the election of members of both branches of Congress and with the internal organization and affairs of each;

II, 4: Section 6, stating the perquisites and emoluments of members of both branches, and stating one limitation on civil employment of members;

II, 5: Section 7, defining the relationship between the legislative and executive departments of the government and describing the President's veto power;

II, 6: Section 8, stating the powers of Congress;

II, 7: Section 9, stating some limitations on the powers outlined in Section 8;

II, 8: Section 10, stating limitations on the powers of the states and the extent to which they must give over certain powers to the Congress.

We could then proceed to make a similar outline of all the other major divisions, and, after completing that, return to outline the Sections in turn. Some of these, for example Section 8 in Article I, would require the identification of many different topics and subtopics.

Of course, this is only one way of doing the job. There are many others. The first three Articles could be grouped together in one major division, for instance; or instead of two divisions with respect to the amendments, more major divisions could be introduced, grouping the amendments according to the problems they dealt with. We suggest that you try your hand at making your own division of the Constitution into its main parts. Go even further than we did, and try to state the parts of the parts as well. You may have read the Constitution many times, but if you have not applied this rule before, you will find that it reveals much in the document that you never saw.

Here is one more example, again very brief. We have already stated the unity of Aristotle's *Ethics.* Now let us attempt a first approximation of its structure. The whole is divided into the following main parts: A first, treating of happiness as the end of life, and discussing it in relation to all other practicable goods; a second, treating of the nature of voluntary action, and its relation to the formation of good and bad habits; a third, discussing the various virtues and vices, both moral and intellectual; a fourth, dealing with moral states that are neither virtuous nor vicious; a fifth, treating of friendship; and a sixth and last, discussing pleasure, and completing the account of human happiness begun in the first.

These divisions obviously do not correspond to the ten books of the *Ethics.* Thus, the first part is accomplished in the first book; the second part runs through Book II and the first half of Book III; the third part extends from the rest of Book III through the end of Book VI; the discussion of pleasure occurs at the end of Book VII and again at the beginning of Book X.

We mention this to show you that you need not follow the apparent structure of a book as indicated by its chapter divisions. That structure may, of course, be better than the outline you develop, but it may also be worse; in any event, the point is to make your own outline. The author made his in order to write a good book. You must make yours in order to read it well. If he were a perfect writer and you a perfect reader, it would follow that the two would be the same. In proportion as either of you falls away from perfection, all sorts of discrepancies will inevitably result.

This does not mean that you should ignore chapter headings and sectional divisions made by the author; we did not ignore them in our analysis of the Constitution, although we did not slavishly follow them, either. They are intended to help you, just as titles and prefaces are. But you must use them as guides for your own activity, and not rely on them passively. There are few authors who execute their plan perfectly, but there is often more plan in a good book than meets the eye at first. The surface can be deceiving. You must look beneath it to discover the real structure.

How important is it to discover that real structure? We think very important. Another way of saying this is to say that Rule 2—the requirement that you state the unity of a book—cannot be effectively followed without obeying Rule 3—the requirement that you state the parts that make up that unity. You might, from a cursory glance at a book, be able to come up with an adequate statement of its unity in two or three sentences. But you would not really know that it was adequate. Someone else, who had read the book better, might know this, and award you high marks for your efforts. But for you, from your point of view, it would have been merely a good guess, a lucky hit. This is why the third rule is absolutely necessary as a complement to the second one.

A very simple example will show what we mean. A two-year-old child, just having begun to talk, might say that “two plus two is four.” Objectively, this is a true statement; but we would be wrong to conclude from it that the child knew much mathematics. In fact, the child probably would not know what the statement meant, and so, although the statement by itself was adequate, we would have to say that the child still needed training in the subject. Similarly, you might be right in your guess about a book’s main theme or point, but you still need to go through the exercise of showing *how* and *why* you stated it as you did. The requirement that you outline the parts of a book, and show how they exemplify and develop the main theme, is thus supportive of your statement of the book’s unity.

Inspectional Reading IV: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed
4. Read or Listen The Full Book Without Stopping
5. Read or listen 25min and 5min break
    - Read or Listen 20 pages an Hour according Mortimer Adler
6. Read or Listen between 1-50 times the book
7. Speed of Audiobook
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

The Reciprocal Arts of Reading and Writing

In general, the two rules of reading that we have been discussing look as if they were rules of writing also. Of course they are. Writing and reading are reciprocal, as are teaching and being taught. If authors and teachers did not organize their communications, if they failed to unify them and order their parts, there would be no point in directing readers or listeners to search for the unity and uncover the structure of the whole.

Nevertheless, although the rules are reciprocal, they are not followed in the same way. The reader tries to *uncover* the skeleton that the book conceals. The author starts with the skeleton and tries to *cover it up.* His aim is to conceal the skeleton artistically or, in other words, to put flesh on the bare bones. If he is a good writer, he does not bury a puny skeleton under a mass of fat; on the other hand, neither should the flesh be too thin, so that the bones show through. If the flesh is thick enough, and if flabbiness is avoided, the joints will be detectable and the motion of the parts will reveal the articulation.

Why is this so? Why should not an expository book, one that attempts to present a body of knowledge in an ordered way, be merely an outline of the subject? The reason is not only that most readers cannot read outlines, and that such a book would be repellent to a self-respecting reader who thought that if he could do his job, the author ought to do his. There is more to it than that. The flesh of a book is as much a part of it as the skeleton. This is as true of books as it is of animals and human beings. The flesh—the outline spelled out, “read out,” as we sometimes say —adds an essential dimension. It adds life, in the case of the animal. Just so, actually writing the book from an outline, no matter how detailed, gives the work a kind of life that it would not otherwise have had.

We can summarize all of this by recalling the old-fashioned maxim that a piece of writing should have unity, clarity, and coherence. That is, indeed, a basic maxim of good writing. The two rules we have been discussing in this chapter relate to writing that follows that maxim. If the writing has unity, we must find it. If the writing has clarity and coherence, we must appreciate it by finding the distinction and the order of the parts. What is clear is so by the distinctness of its outlines. What is coherent hangs together in an orderly disposition of parts.

These two rules, therefore, can be used to distinguish well made books from badly made ones. If, after you have attained sufficient skill, no amount of effort on your part results in your apprehension of the unity of a book, and if you are also not able to discern its parts and their relation to one another, then very likely the book is a bad one, whatever its reputation. You should not be too quick to make this judgment; perhaps the fault is in you instead of the book. However, neither should you fail *ever* to make it and always assume that the fault is in you. In fact, whatever your own failings as a reader, the fault is usually in the book, for most books—the very great majority—are badly made books in the sense that their authors did not write them according to these rules.

These two rules can also, we might add, be used in reading any substantial part of an expository book, as well as the whole. If the part chosen is itself a relatively independent, complex unity, its unity and complexity must be discerned for it to be well read. Here there is a significant difference between books conveying knowledge and poetical works, plays, and novels. The parts of the former can be much more autonomous than the parts of the latter. The person who says of a novel that he has "read enough to get the idea" does not know what he is talking about. He cannot be correct, for if the novel is any good at all, the idea is in the whole and cannot be found short of reading the whole. But you can get the idea of Aristotle's *Ethics* or Darwin's *Origin of Species* by reading some parts carefully, although you would not, in that case, be able to observe Rule 3.

Discovering the Author's Intentions

There is one more rule of reading that we want to discuss in this chapter. It can be stated briefly. It needs little explanation and no illustration. It really repeats in another form what you have already done if you have applied the second and third rules. But it is a useful repetition because it throws the whole and its parts into another light.

RULE 4. FIND OUT WHAT THE AUTHOR'S PROBLEMS WERE. The author of a book starts with a question or a set of questions. The book ostensibly contains the answer or answers.

The writer may or may not tell you what the questions were as well as give you the answers that are the fruits of his work. Whether he does or does not, and especially if he does not, it is your task as a reader to formulate the questions as precisely as you can. You should be able to state the main question that the book tries to answer, and you should be able to state the subordinate questions if the main question is complex and has many parts. You should not only have a fairly adequate grasp of all the questions involved but should also be able to put the questions in an intelligible order. Which are primary and which secondary? Which questions must be answered first, if others are to be answered later?

You can see how this rule duplicates, in a sense, work you have already done in stating the unity and finding its parts. It may, however, actually help you to do that work. In other words, following the fourth rule is a useful procedure in conjunction with obeying the other two.

And since the rule is a little more unfamiliar than the other two, it may be even more helpful to you in tackling a difficult book. We want to emphasize, however, that we do not mean for you to fall into what is called by critics the intentional fallacy. That is the fallacy of thinking you can discover what was in an author's mind from the book he has written. This applies particularly to literary works; it is a grave error, for example, to try to psychoanalyze Shakespeare from the evidence of *Hamlet.* Nevertheless, even with a poetical work, it is often extremely helpful to try to say what the author was trying to do. In the case of expository works, the rule has obvious merit. And yet most readers, no matter how skilled

in other respects, very often fail to observe it. As a result, their conception of a book's main point or theme may be extremely deficient, and of course their outline of its structure will be chaotic. They will fail to see the unity of a book because they do not see *why it has the unity it has;* and their apprehension of the book's skeletal structure will lack comprehension of *the end that it serves.*

If you know the kinds of questions anyone can ask about anything, you will become adept in detecting an author's problems. They can be formulated briefly: Does something exist? What kind of thing is it? What caused it to exist, or under what conditions can it exist, or why does it exist? What purpose does it serve? What are the consequences of its existence? What are its characteristic properties, its typical traits? What are its relations to other things of a similar sort, or of a different sort? How does it behave? *These are all theoretical questions.* What ends should be sought? What means should be chosen to a given end? What things must one do to gain a certain objective, and in what order? Under these conditions, what is the right thing to do, or the better rather than the worse? Under what conditions would it be better to do this rather than that? *These are all practical questions.*

This list of questions is far from being exhaustive, but it does represent the types of most frequently asked questions in the pursuit of theoretical or practical knowledge. It may help you discover the problems a book has tried to solve. The questions have to be adapted when applied to works of imaginative literature, and there too they will be useful.

The First Stage of Analytical Reading

We have now stated and explained the first four rules of reading. They are rules of analytical reading, although if you inspect a book well before reading it, that will help you to apply them.

It is important at this point to recognise that these first four rules are connected and form a group of rules having a single aim. Together, they provide the reader who applies them with a knowledge of a book's structure. When you have applied them to a book, or indeed to anything fairly lengthy and difficult that you may be reading, you will have accomplished the first stage of reading it analytically.

You should not take the term "stage" in a chronological sense, unless perhaps at the very beginning of your exercise as an analytical reader. That is, it is not necessary to read a book through in order to apply the first four rules, then to read it again and again in order to apply the other rules. The practiced reader accomplishes all of these stages at once. Nevertheless, you must realize that knowing a book's structure does constitute a stage toward reading it analytically.

Another way to say this is that applying these first four rules helps you to answer the first basic question about a book. You will recall that that first question is: *What is the book about as a whole?* You will also recall that we said that this means discovering the leading theme of the book, and how the author develops this theme in an orderly way by subdividing it into its essential subordinate themes or topics. Clearly, applying the first four rules of reading will provide most of what you need to know in order to answer this question—although it should be pointed out that your answer will improve in accuracy as you proceed to apply the other rules and to answer the other questions.

Since we have now described the first stage of analytical reading, let us pause a moment to write out the first four rules in order, under the appropriate heading, for review.

Theoretical book Questions

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?
- Does something exist?
- What kind of thing is it?
- What caused it to exist, or?
- Under what conditions can it exist, or why does it exist?
- What purpose does it serve?
- What are the consequences of its existence?
- What are its characteristic properties, its typical traits?
- What are its relations to other things of a similar sort, or of a different sort?
- How does it behave?
- These are all theoretical questions. What ends should be sought?

2. Practical book Questions.

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?
- What means should be chosen to a given end?
- What things must one do to gain a certain objective, and in what order? Under these conditions, what is the right thing to do, or the better rather than the worse?
- Under what conditions would it be better to do this rather than that? These are practical questions.

3. History Questions

- Who
- What
- Where
- When
- Why
- How

Despite the fact that most histories are closer to fiction than to science, they can be read as expository works, and therefore they should be. Hence, we must ask the same questions of a historical book that we ask of any expository book. Because of the special nature of history, we must ask those questions a little differently and must expect to receive slightly different kinds of answers. As far as the first question is concerned, every history has a particular and limited subject. It is surprising, then, how often readers do not trouble to find out what this is. In particular, they do not always note carefully what limitations the author sets for himself. A history of the Civil War is not a history of the world in the nineteenth century. It probably will not be a history of the American West in the 1860s. It could, though perhaps it should not, ignore the state of American education in that decade, or the movement of the American frontier, or the progress of American freedom. Hence, if we are to read a history well, it is necessary to know precisely what it is about and what it is not about. Certainly, if we are to criticize it, we must know the latter. An author cannot be blamed for not doing what he did not try to do.

With regard to the second question, the historian tells a story, and that story, of course, occurred in time. Its general outlines are thus determined, and we do not have to search for them. But there is more than one way to tell a story, and we must know how the historian has chosen to tell his. Does he divide his work into chapters that correspond to years or decades or generations? Or does he divide it according to other rubrics of his own choosing? Does he discuss, in one chapter, the economic history of his period, and cover its wars and religious movements and literary productions in others? Which of these is most important to him? If we discover that, if we can say which aspect of the story he is telling seems to him most fundamental, we can understand him better. We may not agree with his judgment about what is basic, but we can still learn from him.

Criticism of history takes two forms. We can judge—but only, as always, after we understand what is being said—that a historian's work lacks verisimilitude. People just do not act that way, we may feel. Even if the historian documents his statements by giving us access to his sources, and even if to our knowledge they are relevant, we can still feel that

he has misunderstood them, that he has judged them in the wrong way, perhaps through some deficiency in his grasp of human nature or human affairs. We tend to feel this, for example, about many older historians who do not include much discussion of economic matters in their work. People, we may be inclined to think now, act out of self-interest; too much nobility ascribed to the “hero” of a history may make us suspicious. On the other hand, we may think, especially if we have some special knowledge of the subject, that the historian has misused his sources. We may be indignant to discover that he has not read a certain book that we have read. And he may be misinformed about the facts of the matter. In that case, he cannot have written a good history of it. We expect a historian to be informed.

The first criticism is, however, more important. A good historian must combine the talents of the storyteller and the scientist. He must know what is likely to have happened as well as what some witnesses or writers said actually did happen. With regard to the last question, What of it?, it is possible that no kind of literature has a greater effect on the actions of men than history. Satires and pictures of philosophical utopias have little effect; we would all like the world to be better, but we are seldom inspired by the recommendations of authors who do no more than describe, often bitterly, the difference between the real and the ideal. History, which tells us of the actions of men of the past, often does lead us to make changes, to try to better our lot. In general, statesmen have been more learned in history than in other disciplines. History suggests the possible, for it describes things that have already been done. If they have been done, perhaps they can be done again—or perhaps they can be avoided. The main answer to the question, What of it?, therefore, lies in the direction of practical, political action. For this reason it is of great importance that history be read well. Unfortunately, leaders have often acted with some knowledge of history but not enough. With the world as small and dangerous as it has become, it would be a good idea for all of us to start reading history better.

4. Biography Question.

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

5. Autobiography Questions.

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

6. Current Events Question

Thus the most important thing to know, when reading any report of current happenings, is *who is writing the report.* What is involved here is not so much an acquaintance with the reporter himself as with the *kind* of mind he has. The various sorts of filter-reporters fall into groups. To understand what kind of filter our reporter's mind is, we must ask a series of questions about it. This amounts to asking a series of questions about any material dealing with current events. The questions are these:

1. What does the author want to prove?

2. Whom does he want to convince?

3. What special knowledge does he assume?

4. What special language does he use?

5. Does he really know what he is talking about?

For the most part it is safe to assume that all current events books want to prove something. Often it is easy enough to discover what this is. The blurb often states the main contention or thesis of such books. If it does not appear there, it may be stated by the author in a preface.

Having asked what the book is trying to prove, you should next ask whom the author is trying to convince. Is the book intended for those "in the know"—and are you in that category? Is it for that small group of persons who can do something, and quickly, about the situation the author describes? Or is it for everyone? If you do not belong to the audience for which the book is intended, you may not want to read it.

7. Science and Mathematics

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

8. Philosophy

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

What are these “childishly simple” questions that philosophers ask? When we write them down, they do not seem simple, because to answer them is so difficult. Nevertheless, they are initially simple in the sense of being basic or fundamental.

Take the following questions about *being or existence,* for example: What is the difference between existing and not existing? What is common to all the things that do exist, and what are the properties of everything that does exist? Are there different ways in which things can exist—different modes of being or existence? Do some things exist only in the mind or for the mind, whereas others exist outside the mind, and whether or not they are known to us, or even knowable by us? Does everything that exists exist physically, or are there some things that exist apart from material embodiment? Do all things change, or is there anything that is immutable? Does anything exist necessarily, or must we say that everything that does exist might not have existed? Is the realm of possible existence larger than the realm of what actually does exist?

These are typically the kind of questions that a philosopher asks when he is concerned to explore the nature of being itself and the realms of being. As questions, they are not difficult to state or understand, but they are enormously difficult to answer—so difficult, in fact, that there are philosophers, especially in recent times, who have held that they cannot be answered in any satisfactory manner.

Another set of philosophical questions concerns *change or becoming* rather than being. Of the things in our experience to which we would unhesitatingly attribute existence, we would also say that all of them are subject to change. They come into being and pass away; while in being, most of them move from one place to another; and many of them change in quantity or in quality: they become larger or smaller, heavier or lighter; or, like the ripening apple and the aging beefsteak, they change in color.

What is involved in any change? In every process of change, is there something that endures unchanged as well as some respect or aspect of that enduring thing which undergoes change? When you learn something that you did not know before, you have certainly changed with respect to the knowledge you have acquired, but you are also the same individual that you were before; if that were not the case, *you* could not be said to have changed through learning. Is this true of all change? For example, is it true of such

remarkable changes as birth and death—of coming to be and passing away—or only of less fundamental changes, such as local motion, growth, or alteration in quality? How many different kinds of change are there? Do the same fundamental elements or conditions enter into all processes of change, and are the same causes operative in all? What do we mean by a cause of change? Are there different types of causes responsible for change? Are the causes of change—of becoming—the same as the causes of being, or existence?

Such questions are asked by the philosopher who turns his attention from being to becoming and also tries to relate becoming to being. Once again, they are not difficult questions to state or understand, though they are extremely difficult to answer clearly and well. In any case, you can see how they begin with a childishly simple attitude toward the world and our experience of it.

Unfortunately, we do not have space to go into the whole range of questions more deeply. We can only list some other questions that philosophers ask and try to answer. There are questions not only about being and becoming, but also about necessity and contingency; about the material and the immaterial; about the physical and the non-physical; about freedom and indeterminacy; about the powers of the human mind; about the nature and extent of human knowledge; about the freedom of the will.

All these questions are speculative or theoretical in the sense of those terms that we have employed in distinguishing between the theoretical and practical realms. But philosophy, as you know, is not restricted to theoretical questions only.

Take *good and evil,* for instance. Children are much concerned with the difference between good and bad; their behinds are likely to suffer if they make mistakes about it. But we do not stop wondering about the difference when we grow up. Is there a universally valid distinction between good and evil? Are there certain things that are always good, others that are always bad, whatever the circumstances? Or was Hamlet right when, echoing Montaigne, he said: “There is nothing either good or bad but thinking makes it so.”

Good and evil, of course, are not the same as right and wrong; the two pairs of terms seem to refer to different classes of things. In particular, even if we feel that whatever is right is good, we probably do not feel that whatever is wrong is evil. But how do we make this distinction precise?

“Good” is an important philosophical word, but it is an important word in our everyday vocabulary, too. Trying to say what it means is a heady exercise; it will involve you very deeply in philosophy before you know it. There are many things that are good, or, as we would prefer to say, there are many goods. Is it possible to order the goods? Are some more important than others? Do some depend on others? Are there circumstances in which goods conflict, so that you have to choose one good at the expense of forgoing another?

Again, we do not have space to go more extensively into these questions. We can only list some other questions in the practical realm. There are questions not only about

good and evil, right and wrong, and the order of goods, but also about duties and obligations; about virtues and vices; about happiness, life's purpose or goal; about justice and rights in the sphere of human relations and social interaction; about the state and its relation to the individual; about the good society, the just polity, and the just economy; about war and peace.

The two groups of questions that we have discussed determine or identify two main divisions of philosophy. The questions in the first group, the questions about being and becoming, have to do with what *is* or *happens* in the world. Such questions belong to the division of philosophy that is called theoretical or speculative. The questions in the second group, the questions concerning good and evil, or right and wrong, have to do with what *ought* to be done or sought, and they belong to the division of philosophy that is sometimes called practical, and is more accurately called normative. Books that tell you how to make something, such as a cookbook, or how to do something, such as a driver's manual, need not try to argue that you ought to become a good cook, or learn to drive a car well; they can assume that you want to make or do something and merely tell you how to succeed in your efforts. In contrast, books of normative philosophy concern themselves primarily with the goals all men *ought* to seek—goals such as leading a good life or instituting a good society—and, unlike cookbooks and driving manuals, they go no further than prescribing in the most universal terms the means that *ought* to be employed in order to achieve these goals.

The questions that philosophers ask also serve to distinguish subordinate branches of the two main divisions of philosophy. A work of speculative or theoretical philosophy is metaphysical if it is mainly concerned with questions about being or existence. It is a work in the philosophy of nature if it is concerned with becoming—with the nature and kinds of changes, their conditions and causes. If its primary concern is with knowledge—with questions about what is involved in our knowing anything, with the causes, extent, and limits of human knowledge, and with its certainties and uncertainties—then it is a work in epistemology, which is just another name for theory of knowledge. Turning from theoretical to normative philosophy, the main distinction is between questions about the good life and what is right or wrong in the conduct of the individual, all of which fall within the sphere of ethics, and questions about the good society and the conduct of the individual in relation to the community—the sphere of politics or political philosophy.

9. Theology.

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

10. Social Science.

- What?
- Who?
- When?
- Where?
- How?
- Do/Does?
- Can?
- May/might?

THE FIRST STAGE OF ANALYTICAL READING, OR RULES FOR FINDING WHAT A BOOK IS ABOUT

1. **Classify the book according to kind and subject matter.**

2. **State what the whole book is about with the utmost brevity.**

3. **Enumerate its major parts in their order and relation, and outline these parts as you have outlined the whole.**

4. **Define the problem or problems the author is trying to solve.**

Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context?

Analysis of Grammar.

English Grammar: What topics to cover when analyse the grammar

Rule 5. Review and analyze text in grammatical way. There are number of things I will look when analyse and review text in grammatical way:

A. The verb.
B. Verb and Auxiliaries.
C. The semantics of the verb phrase.
D. Nouns and determiners.
E. Noun and noun phrases.
F. Pronouns and numerals.
G. Adjectives and adverbs.
H. The semantics and grammar of adverbials.
I. Prepositions and prepositional phrases.
J. The clause: adjunct.
K. Negation.
L. Clause type and Illocutionary Force.
M. Content clauses and reported speech.
N. Relative construction and unbounded dependencies.
O. Comparative construction.
P. Non finite and verbless clauses.
Q. Coordination and supplementation.
R. Information packaging.
S. Deixis and anaphora.
T. Inflectional morphology and related matters.
U. Lexical words.
V. Punctuation.
W. The simple sentence.
X. Sentence type and discourse and functions.
Y. Pro forms and ellipsis.
Z. Coordination.

AA. The complex sentences.

BB. Syntactic and semantic functions and subortinate clauses.

CC. Complementation of verbs and adjectives.

DD. The noun phrase.

EE. Theme, focus and information processing.

FF. From sentence to text.

Grammar

1. **The Cambridge Grammar of English Language by Rodney Huddleston.**
2. **Collins Cobuild English grammar.**
3. **English Grammar and Composition by Wren and Martin.**
4. **The Grammar of English Grammar by Gould Brown.**
5. **Comprehensive grammar of English Language.**
6. **The New Fowler's Modern English Usage.**

Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
   - Critical Discourse Analysis_ The Critical Study of Language.
   - Discourse analysis.
   - The Routledge handbook of discourse analysis.

Inspectional Reading V: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed.
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed.
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed.
4. Read or Listen The Full Book Without Stopping.
5. Read or listen 25min and 5min break.
    - Read or Listen 20 pages an Hour according Mortimer Adler.
6. Read or Listen between 1-50 times the book.
7. Speed of Audiobook.
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed.
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Topics in Interpretation

Rule 6. Review The Figure of Speech of the Book the Author Wrote. Check Figure of Speech Folder.

A. **Literary Device.**
B. **FIGURES OF SPEECH - Biblical Research Journal.**
C. **Figure of Speech.**

Rule 7. Review and analyze text in hermeneutical way. There are number of things I will look when analyse and review text in Hermeneutical way By Milton Terry

A. **Symbols-What does it mean of symbols?**
B. **What Symbols meant at that time?**
C. **Did the symbols changed the meaning over time?**
D. **Books on Symbols.**
    - **Blake Dictionary_ The Ideas and Symbols of William Blake.**
    - **A Dictionary of Literary Symbols.**
    - **A Dictionary of Literary Symbols.**
    - **A DICTIONARY OF SYMBOLS.**
    - **Dictionary of BIBLICAL IMAGERY.**
E. **Review academic word.**
F. **Review academic terms.**
G. **Review the figure of speech.**
H. **What does mean During that time? What Does mean now?**
I. **These are the following books to use for Review and Analysis of Propaganda:**
    - **All Art of Propaganda by George Orwell.**
    - **Computational Propaganda by Samuel Woolley.**
    - **Fake News, Propaganda and plain old lies by Donald Barclay.**
    - **How Propaganda Works by Jason Stanley.**
    - **Propaganda and Persuasion by Garth Jowett.**
    - **Media, persuasion and Propaganda by Marshall Soules.**
    - **Primetime Propaganda by Ben Shapiro.**
    - **Propaganda Studies by Jonathan Auerbach.**

RULE 8. COMING TO TERMS WITH AN AUTHOR

A term is not a word—at least, not just a word without further qualifications. If a term and a word were exactly the same, you would only have to find the important words in a book in order to come to terms with it. But a word can have many meanings, especially an important word. If the author uses a word in one meaning, and the reader reads it in another, words have passed between them, but they have not come to terms. Where there is unresolved ambiguity in communication, there is no communication, or at best communication must be incomplete.

A. Define each Term.
B. Terms vs Opposite terms.
C. Academic Terms.
D. Make a list of the words that have not been understood and define them and find out the context.
E. Ask the author, speaker, presenter or debater define the term.

Rules 9 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

1. **Introduction to Logic by Patrick Hurley.**
2. **Handbook of Logic and language by J van Benthem.**
3. **Introduction to logic and critical thinking by Merrilee h Salmon.**
4. **Logically Fallacious By Bo BENNET.**
5. **Modal Logic by Patrick Blackburn.**
6. **Modal Logic by Brian Chellas.**
7. **Symbolic Logic By Tony Roy.**
8. **A System of Logic by John Stuart Mill.**
9. **Argumentation and Debate by austin Freely.**
10. **Critical Thinking, reading and Writing by Sylvan Barnett.**
11. **Critical Thinking- The Art of Argument.**
12. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies.**
13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

The first stage of analytical reading has been accomplished when you have applied the four rules listed at the end of the last chapter, which together allow you to tell what a book is about and to outline its structure. You are now ready to go on to the next stage, which also comprises four rules of reading. The first of these we call, for short, coming to terms.

Coming to terms is usually the last step in any successful business negotiation. All that remains is to sign on the dotted line. But in the analytical reading of a book, coming to terms is the first step beyond the outline. Unless the reader comes to terms with the author, the communication of knowledge from one to the other does not take place. For *a term is the basic element of communicable knowledge.*

Words vs. Terms

A *term* is not a *word*—at least, not just a word without further qualifications. If a term and a word were exactly the same, you would only have to find the important words in a book in order to come to terms with it. But a word can have many meanings, especially an important word. If the author uses a word in one meaning, and the reader reads it in another, words have passed between them, but they have not come to terms. Where there is unresolved ambiguity in communication, there is no communication, or at best communication must be incomplete.

Just look at the word "communication" for a moment. Its root is related to the word "common." We speak of a community as a group of people who have something in common. Communication is an effort on the part of one person to share something with another person (or with an animal or a machine): his knowledge, his decisions, his sentiments. It succeeds only when it results in a common something, such as an item of information or knowledge that two parties share.

When there is ambiguity in the communication of knowledge, all that is in common are the words that one person speaks or writes and another hears or reads. So long as ambiguity persists, there is no meaning in common between writer and reader. For the communication to be successfully completed, therefore, it is necessary for the two parties to use the same words *with the same meanings*—in short, to come to terms. When that happens, communication happens, the miracle of two minds with but a single thought.

A term can be defined as an unambiguous word. That is not quite accurate, for strictly there are no unambiguous words. What we should have said is that a term is a word *used unambiguously.* The dictionary is full of words. They are almost all ambiguous in the sense that they have many meanings. But a word that has several meanings can be used in one sense at a time. When writer and reader somehow manage for a time to use a given word with one and only one meaning, then, during that time of unambiguous usage, they have come to terms.

You cannot find terms in dictionaries, though the materials for making them are there. Terms occur only in the process of communication. They occur when a writer tries to avoid ambiguity and a reader helps him by trying to follow his use of words. There are, of course, many degrees of success in this. Coming to terms is the ideal toward which writer and reader should strive. Since this is one of the primary achievements of the art of writing and reading, we can think of terms as *a skilled use of words for the sake of communicating knowledge.*

At this point it is probably clear that we are speaking exclusively of expository writers and expository books. Poetry and fiction are not nearly so concerned with the unambiguous use of words as expository works—works that convey knowledge in the broad sense of the word that we have been employing. It can even be argued that the best poetry is that which is the most richly ambiguous, and it has been said with justice that any good poet is sometimes intentionally ambiguous in his writing. This is an important insight

about poetry to which we will return later. It is obviously one of the primary differences between the poetical and the expository or scientific realms of literary art.

We are now ready to state the fifth rule of reading (an expository work). Stated roughly, it is this: You must spot the important words in a book and figure out how the author is using them. But we can make that a little more precise and elegant: RULE 10. FIND THE IMPORTANT WORDS AND THROUGH THEM COME TO TERMS WITH THE AUTHOR. Note that the rule has two parts. The first part is to locate the important words, the words that make a difference. The second part is to determine the meaning of these words, as used, with precision.

This is the first rule for the second stage of analytical reading, the aim of which is not the outlining of a book's structure but the interpretation of its contents or message. The other rules for this stage, to be discussed in the next chapter, are like this one in an important respect. They also require you to take two steps: a step dealing with the language as such, and a step beyond the language to the thought that lies behind it.

If language were a pure and perfect medium for thought, these steps would not be separate. If every word had only one meaning, if words could not be used ambiguously, if, in short, each word was an ideal term, language would be a diaphanous medium. The reader would see straight through the writer's words to the content of his mind. If that were the case, there would be no need at all for this second stage of analytical reading. Interpretation would be unnecessary.

But of course that is far from the case. There is no use crying about it, no use making up impossible schemes for an ideal language, as the philosopher Leibniz and some of his followers have tried to do. Indeed, if they succeeded, there would be no more poetry. The only thing to do, therefore, in expository works, is to make the best of language as it is, and the only way to do that is to use language as skillfully as possible when you want to convey, or to receive, knowledge.

Because language is imperfect as a medium for conveying knowledge, it also functions as an obstacle to communication. The rules of interpretive reading are directed to overcoming that obstacle. We can expect a good writer to do his best to reach us through the barrier language inevitably sets up, but we cannot expect him to do the job all by himself. We must meet him halfway. We, as readers, must try to tunnel through from our side of the barrier. The likelihood of a meeting of minds *through* language depends on the willingness of both reader and writer to work together. Just as teaching will not avail unless there is *a reciprocal activity of being taught,* so no author, regardless of his skill in writing, can achieve communication without *a reciprocal skill on the part of readers.* If that were not so, the diverse skills of writing and reading would not bring minds together, however much effort was expended, any more than the men who tunnel through from opposite sides of a mountain would ever meet unless they made their calculations according to the same principles of engineering.

As we have pointed out, each of the rules of interpretive reading involves two steps. To get technical for a moment, we may say that these rules have a grammatical and a logical aspect. The grammatical aspect is the one that deals with words. The logical step deals with their meanings or, more precisely, with terms. So far as communication is concerned, both steps are indispensable. If language is used without thought, nothing is being communicated. And thought or knowledge cannot be communicated without language. As arts, grammar and logic are concerned with language in relation to thought and thought in relation to language. That is why skill in both reading and writing is gained through these arts.

This business of language and thought—especially the distinction between words and terms—is so important that we are going to risk being repetitious to be sure the main point is understood. The main point is that *one* word can be the vehicle for *many* terms, and *one* term can be expressed by *many* words. Let us illustrate this schematically in the following manner. The word “reading” has been used in many senses in the course of our discussion. Let us take three of these senses: By the word “reading” we may mean (1) reading to be entertained, (2) reading to get information, and (3) reading to achieve understanding.

Now let us symbolise the word “reading” by the letter *X,* and the three meanings by the letters *a, b,* and *c.* What is symbolised in this scheme by *Xa, Xb,* and *Xc,* are not three words, for *X* remains the same throughout. But they are three terms, on the condition, of course, that you, as reader, and we, as writers know when *X* is being used in one sense and not another. If we write *Xa* in a given place, and you read *Xb,* we are writing and you are reading the same word, but not in the same way. The ambiguity prevents or at least impedes communication. Only when you think the word as we think it, do we have one thought between us. Our minds cannot meet in *X,* but only in *Xa* or *Xb* or *Xc.* Thus we come to terms.

You cannot locate the key words without making an effort to understand the passage in which they occur. This situation is somewhat paradoxical. If you do understand the passage, you will, of course, know which words in it are the most important. If you do not fully understand the passage, it is probably because you do not know the way the author is using certain words. If you mark the words that trouble you, you may hit the very ones the author is using specially. That this is likely to be so follows from the fact that you should have no trouble with the words the author uses in an ordinary way.

From your point of view as a reader, therefore, the most important words are those that give you trouble. It is likely that these words are important for the author as well. However, they may not be.

It is also possible that words that are important for the author do not bother you, and precisely because you understand them. In that case, you have already come to terms with the author. Only where you fail to come to terms have you work still to do.

A. Define each Term.
B. Does the definition is coextensive with the things defined. Is is too broad or too narrow or neither?
C. Is the definition clear or obscure?
D. Is the definition literal or metaphorical?
E. Is the definition brief or long?
F. Is the definition negative, positive?
G. Is the definition circular?
H. Is the definition nominal definition?
I. Is the definition is essential definition?
J. What type of definition?
    - Stipulative Definition.
    - Lexical Definition.
    - Precising Definition.
    - Theoretical definition.
    - Persuasive definition.
K. The structure of definition.
    - Extension and Intension.
    - Extension and Denotative definition.
    - Ostensive definition and quasi-ostensive definition.
    - Intension and intensional definition.
    - Synonymous definition.
    - Operational definition.
    - Definition by genus and difference.
L. What division of terms does the author use?
    - Qualitative vs Quantitative.
    - Comprehension vs extension.
    - Intension vs extension.
    - Connotation vs Denotation.
    - Meaning vs Reference.
M. Terms vs Opposite terms.
N. Academic Terms.
O. Make a list of the words that have not been understood and define them and find out the context.
P. Ask the author, speaker, presenter or debater define the term.

Q. Make a list of the terms author, presenter, discussion, debate used.
R. Are all terms unambiguous or ambiguous?
S. Are the terms clear or unclear?
T. Are the terms exact or vague?
U. Are the terms univocal, analogical or equivocal?
V. Are the terms literal or metaphor?
W. Are the terms positive or negative?
X. Are the terms simple or complex?
Y. Are terms categoregmatic or syncategoregmatic?
Z. Are terms universal, particular or singular?
AA. Are the terms collective or divisive?
BB. Are the terms concrete or abstract?
CC. Are terms absolute or relative?
DD. Good Evidence, does not become Bad evidence, because of the Lapse of Time
EE. Double Standards is the sign of failed argument
FF. Inconsistency is the sign of failed Argument

Rules 11 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

1. **Introduction to Logic by Patrick Hurley.**
2. **Handbook of Logic and language by J van Benthem.**
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11. **Critical Thinking- The Art of Argument.**
12. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies.**
13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Finding the Key Words

We are now prepared to put flesh on the rule that requires the reader to come to terms. How does he go about doing it? How does he find the important or key words in a book?

You can be sure of one thing. Not all the words an author uses are important. Better than that, you can be sure that most of his words are not. Only those words that he uses in a special way are important for him, and for us as readers. This is not an absolute matter, of course, but one of degree. Words may be more or less important. Our only concern is with the fact that some words in a book are more important than others. At one extreme are the words that the author uses as the proverbial man in the street does. Since the author is using these words as everyone does in ordinary discourse, the reader should have no trouble with them. He is familiar with their ambiguity and he has grown accustomed to the variation in their meanings as they occur in this context or that.

For example, the word “reading” occurs in A. S. Eddington’s book, *The Nature of the Physical World.* He speaks of “pointer-readings,” the readings of dials and gauges on scientific instruments. He is using the word “reading” in one of its ordinary senses. It is not for him a technical word. He can rely on ordinary usage to convey what he means to the

reader. Even if he used the word “reading” in a different sense somewhere else in the book —in a phrase, let us say, such as “reading nature”—he could be confident that the reader would note the shift to another of the word’s ordinary meanings. The reader who could not do this could not talk to his friends or carry on his daily business.

But Eddington is not able to use the word “cause” so lightheartedly. That may be a word of common speech, but he is using it in a definitely special sense when he discusses the theory of causation. How that word is to be understood makes a difference that both he and the reader must bother about. For the same reason, the word “reading” is important in this book. We cannot get along with merely using it in an ordinary way.

An author uses most words as men ordinarily do in conversation, with a range of meanings, and trusting to the context to indicate the shifts. Knowing this fact is some help in detecting the more important words. We must not forget, however, that at different times and places the same words are not equally familiar items in daily usage. Contemporary writers will employ most words as they are ordinarily used *today,* and you will know which words these are because you are alive today. But in reading books written in the past, it may be more difficult to detect the words the author is using as most people did at the time and place he was writing. The fact that some authors intentionally employ archaic words, or archaic senses of words, complicates the matter further, as does the translation of books from foreign languages.

Nevertheless, it remains true that most of the words in any book can be read just as one would use them in talking to one’s friends. Take any page of this book and count the words we are using in that way: all the prepositions, conjunctions, and articles, and almost all of the verbs, nouns, adverbs, and adjectives. In this chapter so far, there have been only a few important words: “word,” “term,” “ambiguity,” “communication,” and perhaps one or two more. Of these, “term” is clearly the most important; all the others are important in relation to it.

You cannot locate the key words without making an effort to understand the passage in which they occur. This situation is somewhat paradoxical. If you do understand the passage, you will, of course, know which words in it are the most important. If you do not fully understand the passage, it is probably because you do not know the way the author is using certain words. If you mark the words that trouble you, you may hit the very ones the author is using specially. That this is likely to be so follows from the fact that you should have no trouble with the words the author uses in an ordinary way.

From your point of view as a reader, therefore, the most important words are *those that give you trouble.* It is likely that these words are important for the author as well. However, they may not be.

It is also possible that words that are important for the author do not bother you, and precisely because you understand them. In that case, you have already come to terms with the author. Only where you fail to come to terms have you work still to do.

Technical Words and Special Vocabularies

So far we have been proceeding negatively by eliminating the ordinary words. You discover some of the important words by the fact that they are *not ordinary for you.* That is why they bother you. But is there any other way of spotting the important words? Are there any positive signs that point to them?

There are several. The first and most obvious sign is the explicit stress an author places upon certain words and not others. He may do this in many ways. He may use such typographical devices as quotation marks or italics to mark the word for you. He may call your attention to the word by explicitly discussing its various senses and indicating the way he is going to use it here and there. Or he may emphasize the word by defining the thing that the word is used to name.

No one can read Euclid without knowing that such words as “point,” “line,” “plane,” “angle,” “parallel,” and so forth are of the first importance. These are the words that name geometrical entities defined by Euclid. There are other important words, such as “equals,” “whole,” and “part,” but these do not name anything that is defined. You know they are important from the fact that they occur in the axioms. Euclid helps you here by making his primary propositions explicit at the very beginning. You can guess that the terms composing such propositions are basic, and that underlines for you the words that express these terms. You may have no difficulty with these words, because they are words of common speech, and Euclid appears to be using them that way.

If all authors wrote as Euclid did, you may say, this business of reading would be much easier. But that of course is not possible, although there have in fact been men who thought that any subject matter could be expounded in the geometrical manner. The procedure—the method of exposition and proof—that works in mathematics is not applicable in every field of knowledge. In any event, for our purposes it is sufficient to note what is common to every sort of exposition. *Every field of knowledge has its own technical vocabulary.* Euclid makes his plain right at the beginning. The same is true of any writer, such as Galileo or Newton, who writes in the geometrical manner. In books differently written or in other fields, the technical vocabulary must be discovered by the reader.

If the author has not pointed out the words himself, the reader may locate them through having some prior knowledge of the subject matter. If he knows something about biology or economics before he begins to read Darwin or Adam Smith, he certainly has some leads toward discerning the technical words. The rules of analyzing a book’s structure may help here. If you know what kind of book it is, what it is about as a whole, and what its major parts are, you are greatly aided in separating the technical vocabulary from the ordinary words. The author’s title, chapter headings, and preface may be useful in this connection.

From this you know, for example, that “wealth” is a technical word for Adam Smith, and “species” for Darwin. Since one technical word leads to another, you cannot help but discover other technical words in a similar fashion. You can soon make a list of the important words used by Adam Smith: labor, capital, land, wages, profits, rent, commodity,

price, exchange, productive, unproductive, money, and so forth. And here are some you cannot miss in Darwin: variety, genus, selection, survival, adaptation, hybrid, fittest, creation.

Where a field of knowledge has a well-established technical vocabulary, the task of locating the important words in a book treating that subject matter is relatively easy. You can spot them *positively* through having some acquaintance with the field, or *negatively* by knowing what words must be technical, because they are not ordinary. Unfortunately, there are many fields in which a technical vocabulary is not well established.

Philosophers are notorious for having private vocabularies. There are some words, of course, that have a traditional standing in philosophy. Though they may not be used by all writers in the same sense, they are nevertheless technical words in the discussion of certain problems. But philosophers often find it necessary to coin new words, or to take some word from common speech and *make it a technical word.* This last procedure is likely to be most misleading to the reader who supposes that he knows what the word means, and therefore treats it as an ordinary word. Most good authors, however, anticipating just this confusion, give very explicit warning whenever they adopt the procedure.

In this connection, one clue to an important word is that the author quarrels with other writers about it. When you find an author telling you how a particular word has been used by others, and why he chooses to use it otherwise, you can be sure that word makes a great difference to him.

We have here emphasized the notion of technical vocabulary, but you must not take this too narrowly. The relatively small set of words that express an author's main ideas, his leading concepts, constitutes his special vocabulary. They are the words that carry his analysis, his argument. If he is making an original communication, some of these words are likely to be used by him in a very special way, although he may use others in a fashion that has become traditional in the field. In either case, these are the words that are most important *for him.* They should be important *for you* as a reader also, but in addition any other word whose meaning is not clear is important for you.

The trouble with most readers is that they simply do not pay enough attention to words to locate their difficulties. They fail to distinguish the words that they do not understand sufficiently from those they do. All the things we have suggested to help you find the important words in a book will be of no avail unless you make a deliberate effort to note the words you must work on to find the terms they convey. The reader who fails to ponder, or at least to mark, the words he does not understand is headed for disaster.

If you are reading a book that can increase your understanding, it stands to reason that not all of its words will be completely intelligible to you. If you proceed as if they were all ordinary words, all on the same level of general intelligibility as the words of a newspaper article, you will make no headway toward interpretation of the book. You might

just as well be reading a newspaper, for the book cannot enlighten you if you do not try to understand it.

Most of us are addicted to non-active reading. The outstanding fault of the non-active or undemanding reader is his inattention to words, and his consequent failure to come to terms with the author.

Finding the Meanings

RULE 12. You have to discover the meaning of a word you do not understand by using the meanings of all the other words in the context that you do understand.

Spotting the important words is only the beginning of the task. It merely locates the places in the text where you have to go to work. There is another part of this fifth rule of reading. Let us turn to that now. Let us suppose you have marked the words that trouble you. What next?

There are two main possibilities. Either the author is using these words in a single sense throughout or he is using them in two or more senses, shifting his meaning from place to place. In the first alternative, the word stands for a single term. A good example of the use of important words so that they are restricted to a single meaning is found in Euclid. In the second alternative, the word stands for several terms.

In the light of these alternatives, your procedure should be as follows. First, try to determine whether the word has one or many meanings. If it has many, try to see how they are related. Finally, note the places where the word is used in one sense or another, and see if the context gives you any clue to the reason for the shift in meaning. This last will enable you to follow the word in its change of meanings with the same flexibility that characterises the author's usage.

But, you may complain, everything is clear except the main thing. How does one find out what the meanings are? The answer, though simple, may appear unsatisfactory. But patience and practice will show you otherwise. The answer is that *you have to discover the meaning of a word you do not understand by using the meanings of all the other words in the context that you do understand.* This must be the way, no matter how merry-go-roundish it may seem at first.

The easiest way to illustrate this is to consider a definition. A definition is stated in words. If you do not understand any of the words used in the definition, you obviously cannot understand the meaning of the word that names the thing defined. The word "point" is a basic word in geometry. You may think you know what it means (in geometry), but Euclid wants to be sure you use it in only one way. He tells you what he means by first defining the thing he is later going to use the word to name. He says: "A point is that which has no part."

How does that help to bring you to terms with him? You know, he assumes, what every other word in the sentence means with sufficient precision. You know that whatever has parts is a complex whole. You know that the opposite of complex is simple. To be simple is the same as to lack parts. You know that the use of the words "is" and "that which" means that the thing referred to must be an entity of some sort. Incidentally, it follows from all this that, if there are no physical things without parts, a point, as Euclid speaks of it, cannot be physical.

This illustration is typical of the process by which you acquire meanings. You operate with meanings you already possess. If every word that was used in a definition had itself to be defined, nothing could ever be defined. If every word in a book you were reading was entirely strange to you, as in the case of a book in a totally foreign language, you could make no progress at all.

That is what people mean when they say of a book that it is all Greek to them. They simply have not tried to understand it, which would be justifiable if it were really in Greek. But most of the words in any English book are familiar words. These words surround the strange words, the technical words, the words that may cause the reader some trouble. The surrounding words are the *context* for the words to be interpreted. The reader has all the materials he needs to do the job.

We are not pretending the job is an easy one. We are only insisting that it is not an impossible one. If it were, no one could read a book to gain in understanding. The fact that a book can give you new insights or enlighten you indicates that it probably contains words you may not readily understand. If you could not come to understand those words by your own efforts, then the kind of reading we are talking about would be impossible. It would be impossible to pass from understanding less to understanding more by your own operations on a book.

There is no rule of thumb for doing this. The process is something like the trial-and-error method of putting a jigsaw puzzle together. The more parts you put together, the easier it is to find places for the remaining parts, if only because there are fewer of them. A book comes to you with a large number of words already in place. *A word in place is a term.* It is definitely located by the meaning that you and the author share in using it. The remaining words must be put in place. You do this by trying to make them fit this way or that. The better you understand the picture that the words so far in place already partially reveal, the easier it is to complete the picture by making terms of the remaining words. Each word put into place makes the next adjustment easier.

You will make errors, of course, in the process. You will think you have managed to find where a word belongs and how it fits, only to discover later that the placement of another word requires you to make a whole series of readjustments. The errors will get corrected because, so long as they are not found out, the picture cannot be completed. Once you have had any experience at all in this work of coming to terms, you will soon be able to check yourself. You will know whether you have succeeded or not. You will not blithely think you understand when you do not.

In comparing a book to a jigsaw puzzle, we have made one assumption that is not true. A good puzzle is, of course, one all of whose parts fit. The picture can be perfectly completed. The same is true of the ideally good book, but there is no such book. In proportion as books are good, their terms will be so well made and put together by the author that the reader can do the work of interpretation fruitfully. Here, as in the case of every other rule of reading, bad books are less readable than good ones. The rules do not work on them, except to show you how bad they are. If the author uses words

ambiguously you cannot find out what he is trying to say. You can only find out that he has not been precise.

But, you may ask, does not an author who uses a word in more than a single sense use it ambiguously? And is it not the usual practice for authors to use words in several senses, especially their most important words?

The answer to the first question is No; to the second, Yes. To use a word ambiguously is to use it in several senses without distinguishing or relating their meanings. (For example, we have probably used the word “important” ambiguously in this chapter, for we were not always clear as to whether we meant important for the author or important for you.) The author who does that has not made terms that the reader can come to. But the author who distinguishes the several senses in which he is using a critical word and enables the reader to make a responsive discrimination is offering terms.

You should not forget that one word can represent several terms. One way to remember this is to distinguish between the author’s *vocabulary* and his *terminology.* If you make a list in one column of the important words, and in another of their important meanings, you will see the relation between the vocabulary and the terminology.

There are several further complications. In the first place, a word that has several distinct meanings can be used either in a single sense or in a combination of senses. Let us take the word “reading” again as an example. In some places, we have used it to stand for reading any kind of book. In others, we have used it to stand for reading books that instruct rather than entertain. In still others, we have used it to stand for reading that enlightens rather than informs.

Now if we symbolise here, as we did before, these three distinct meanings of “reading” by *Xa, Xb,* and *Xc,* then the first usage just mentioned is *Xabc,* the second is *Xbc,* and the third *Xc.* In other words, if several meanings are related, one can use a word to stand for all of them, for some of them, or for only one of them at a time. So long as each usage is definite, the word so used is a term.

In the second place, there is the problem of synonyms. The repetition of a single word over and over is awkward and boring, except in mathematical writing, and so good authors often substitute different words having the same or very similar meanings for important words in their text. This is just the opposite of the situation where one word can stand for several terms; here, one and the same term is represented by two or more words used synonymously.

We can express this symbolically as follows. Let *X* and *Y* be two different words, such as “enlightenment” and “insight.” Let the letter *a* stand for the same meaning that each can express, namely, a gain in understanding. Then *Xa* and *Ya* represent the same term, though they are distinct as words. When we speak of reading “for insight” and reading “for enlightenment,” we are referring to the same kind of reading, because the two phrases are

being used with the same meaning. The words are different, but there is only one term for you as a reader to grasp.

This is important, of course. If you supposed that every time an author changed his words, he was shifting his terms, you would make as great an error as to suppose that every time he used the same words, the terms remained the same. Keep this in mind when you list the author's vocabulary and terminology in separate columns. You will find two relationships. On the one hand, a single word may be related to several terms. On the other hand, a single term may be related to several words.

In the third place, and finally, there is the matter of phrases. If a phrase is a unit, that is, if it is a whole that can be the subject or predicate of a sentence; it is like a single word. Like a single word, it can refer to something being talked about in some way.

It follows, therefore, that a term can be expressed by a phrase as well as by a word. And all the relations that exist between words and terms hold also between terms and phrases. Two phrases may express the same term, and one phrase may express several terms, according to the way its constituent words are used.

In general, a phrase is less likely to be ambiguous than a word. Because it is a group of words, each of which is in the context of the others, the single words are more likely to have restricted meanings. That is why a writer is likely to substitute a fairly elaborate phrase for a single word if he wants to be sure that you get his meaning.

One illustration should suffice. To be sure that you come to terms with us about reading, we substitute phrases like "reading for enlightenment" for the single word "reading." To make doubly sure, we may substitute a more elaborate phrase, such as "the process of passing from understanding less to understanding more by the operation of your mind upon a book." There is only one term here, a term referring to the kind of reading that this book is mostly about. But that one term has been expressed by a single word, a short phrase, and a longer one.

This has been a hard chapter to write, and probably a hard one to read. The reason is clear. The rule of reading we have been discussing cannot be made fully intelligible without going into all sorts of grammatical and logical explanations about words and terms.

In fact, we have actually done very little explaining. To give an adequate account of these matters would take many chapters. We have merely touched upon the most essential points. We hope we have said enough to make the rule a useful guide in practice. The more you put it into practice, the more you will appreciate the intricacies of the problem. You will want to know something about the literal and metaphorical use of words. You will want to know about the distinction between abstract and concrete words, and between proper and common names. You will become interested in the whole business of definition: the difference between defining words and defining things; why some words are indefinable, and yet have definite meanings, and so forth. You will seek light on what is called "the emotive use of words," that is, the use of words to arouse

emotions, to move men to action or change their minds, as distinct from the communication of knowledge. And you may even become interested in the relation between ordinary “rational” speech and “bizarre” or “crazy” talk—the speech of the mentally disturbed, where almost every word carries weird and unexpected but nevertheless identifiable connotations.

If the practice of analytical reading elicits these further interests, you will be in a position to satisfy them by reading books on these special subjects. And you will profit more from reading such books, because you will go to them with questions born of your own experience in reading. The study of grammar and logic, the sciences that underlie these rules, is practical only to the extent you can relate it to practice.

You may never wish to go further. But even if you do not, you will find that your comprehension of any book will be enormously increased if you only go to the trouble of finding its important words, identifying their shifting meanings, and coming to terms. Seldom does such a small change in a habit have such a large effect.

Rules 13 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

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15. **Complete Works By Aristotle.**

Inspectional Reading VI: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed
4. Read or Listen The Full Book Without Stopping
5. Read or listen 25min and 5min break
    - Read or Listen 20 pages an Hour according Mortimer Adler
6. Read or Listen between 1-50 times the book
7. Speed of Audiobook
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Not only coming to terms but also making propositions occurs among traders as well as in the world of books. What a buyer or seller means by a proposition is some sort of proposal, some sort of offer or acceptance. In honest dealings, the person who makes a proposition in this sense is declaring his intention to act in a certain way. More than honesty is required for successful negotiations. The proposition should be clear and, of course, attractive. Then the traders can come to terms.

A proposition in a book is also a declaration. It is an expression of the author's judgment about something. He affirms something he thinks to be true, or denies something he judges to be false. He asserts this or that to be a fact. A proposition of this sort is a declaration of knowledge, not intentions. The author may tell us his intentions at the beginning in a preface. In an expository book, he usually promises to instruct us about something. To find out whether he keeps those promises, we must look for his propositions.

Generally, the order of reading reverses the order of business. Businessmen usually come to terms after they find out what the proposition is. But the reader must usually come to terms with an author first, before he can find out what the author is proposing, what judgment he is declaring. That is why the fifth rule of analytical reading concerns words and terms, and the sixth, which we are about to discuss, concerns sentences and propositions.

There is a seventh rule that is closely related to the sixth. The author may be honest in declaring himself on matters of fact or knowledge. We usually proceed in that trust. But unless we are exclusively interested in the author's personality, we should not be satisfied with knowing what his opinions are. *His propositions are nothing but expressions of personal opinion unless they are supported by reasons.* If it is the book and the subject with which it deals that we are interested in, and not just the author, we want to know not merely what his propositions are, but *also why he thinks we should be persuaded to accept them.*

The seventh rule, therefore, deals with arguments of all sorts. There are many kinds of reasoning, many ways of supporting what one says. Sometimes it is possible to argue that something is true; sometimes no more than a probability can be defended. But every sort of argument consists of a number of statements related in a certain way. *This* is said *because* of *that.* The word "because" here signifies a reason being given.

The presence of arguments is indicated by other words that relate statements, such as: *if* this is so, *then* that; or, *since* this, *therefore* that; or, it *follows* from this, that that is the case. In the course of earlier chapters in this book, such sequences occurred. For those of us who are no longer in school, we observed, it is necessary, if we want to go on learning and discovering, to know how to make books teach us well. In that situation, *if* we want to go on learning, *then* we must know how to learn from books, which are absent teachers.

An argument is always a set or series of statements of which some provide the grounds or reasons for what is to be concluded. A paragraph, therefore, or at least a collection of sentences, is required to express an argument. The premises or principles of an argument may not always be stated first, but they are the *source* of the conclusion, nevertheless. If the argument is valid, the conclusion follows from the premises. That does not necessarily mean that the conclusion is true, since one or all of the premises that support it may be false.

There is a grammatical as well as a logical aspect to the order of these rules of interpretation. We go from terms to propositions to arguments, by going from words (and phrases) to sentences to collections of sentences (or paragraphs). We are building up from simpler to more complex units. The smallest significant element in a book is, of course, a single word. It would be true but not adequate to say that a book consists of words. It also consists of groups of words, taken as units, and similarly of groups of sentences, taken as units. The active reader is attentive not only to the words but also to the sentences and paragraphs. There is no other way of discovering the author's terms, propositions, and arguments.

The movement at this stage of analytical reading—*when interpretation is our goal* — seems to be in the opposite direction from the movement in the first stage—*when the goal was a structural outline.* There we went from the book as a whole to its major parts, and then to their subordinate divisions. As you might suspect, the two movements meet somewhere. The major parts of a book and their principal divisions contain many propositions and usually several arguments. But if you keep on dividing the book into its parts, at last you have to say: "In this part, the following points are made." Now each of these points is likely to be a proposition, and some of them taken together probably form an argument.

Thus, the two processes, outlining and interpretation, meet at the level of propositions and arguments. You work down to propositions and arguments by dividing the book into its parts. You work up to arguments by seeing how they are composed of propositions and ultimately of terms. When you have completed the two processes, you can really say that you know the contents of a book.

Sentences vs. Propositions

We have already noticed another thing about the rules we are going to discuss in this chapter. As in the case of the rule about words and terms, we are here also dealing with the relation of language and thought. Sentences and paragraphs are grammatical units. They are units of language. Propositions and arguments are logical units, or units of thought and knowledge.

We have to face here a problem similar to the one we faced in the last chapter. Because language is not a perfect medium for the expression of thought, because one word can have many meanings and two or more words can have the same meaning, we saw how complicated was the relation between an author's *vocabulary* and his *terminology.* One word may represent several terms, and one term may be represented by several words.

Mathematicians describe the relation between the buttons and the buttonholes on a well-made coat as a one-to-one relationship. There is a button for every buttonhole, and a hole for every button. Well, the point is that words and terms do *not* stand in a one-to-one relation. The greatest error you can make in applying these rules is to suppose that a one-to-one relationship exists between the elements of language and those of thought or knowledge.

As a matter of fact, it would be wise not to make too easy assumptions even about buttons and buttonholes. The sleeves of most men's suit jackets bear buttons that have no corresponding buttonholes. And if you have worn the coat for a while, it may have a hole with no corresponding button.

Let us illustrate this in the case of sentences and propositions. Not every sentence in a book expresses a proposition. For one thing, some sentences express questions. They state problems rather than answers. *Propositions are the answers to questions.* They are declarations of knowledge or opinion. That is why we call sentences that express them declarative, and distinguish sentences that ask questions as interrogative. Other sentences express wishes or intentions. They may give us some knowledge of the author's purpose, but they do not convey the knowledge he is trying to expound.

Moreover, not all the declarative sentences can be read as if each expressed one proposition. There are at least two reasons for this. The first is the fact that words are ambiguous and can be used in various sentences. Thus, it is possible for the same sentence to express different propositions if there is a shift in the terms the words express. "Reading is learning" is a simple sentence; but if at one place we mean by "learning" the acquisition of information, and at another we mean the development of understanding, the proposition is not the same, because the terms are different. Yet the sentence is the same.

The second reason is that all sentences are not as simple as "Reading is learning." When its words are used unambiguously, a simple sentence *usually* expresses a single proposition. But even when its words are used unambiguously, a compound sentence expresses two or more propositions. A compound sentence is really a collection of

sentences, connected by such words as “and,” or “if . . . then,” or “not only . . . but also.” You may rightly conclude that the line between a long compound sentence and a short paragraph may be difficult to draw. A compound sentence can express a number of propositions related in the form of an argument.

Such sentences can be very difficult to interpret. Let us take an interesting sentence from Machiavelli’s *The Prince* to show what we mean:

> A prince ought to inspire fear in such a way that, if he does not win love, he avoids hatred; because he can endure very well being feared whilst he is not hated, which will always be as long as he abstains from the property of his citizens and from their women.

This is grammatically a *single* sentence, though it is extremely complex. The semicolon and the “because” indicate the major break in it. The first proposition is that a prince ought to inspire fear in a certain way.

Beginning with the word “because,” we have what is in effect another sentence. (It could be made independent by saying: “The reason for this is that he can endure,” and so forth.) And this sentence expresses two propositions at least: (1) the reason why the prince ought to inspire fear in a certain way is that he can endure being feared so long as he is not hated; (2) he can avoid being hated only by keeping his hands off the property of his citizens and their women.

It is important to distinguish the various propositions that a long, complex sentence contains. In order to agree or disagree with Machiavelli, you must first understand what he is saying. But he is saying three things in this one sentence. You may disagree with one of them and agree with the others. You may think Machiavelli is wrong in recommending terrorism to a prince on any grounds; but you may acknowledge his shrewdness in saying that the prince had better not arouse hatred along with fear, and you may also agree that keeping his hands off his subjects’ property and women is an indispensable condition of not being hated. Unless you recognize the distinct propositions in a complicated sentence, you cannot make a discriminating judgment on what the writer is saying.

Lawyers know this fact very well. They have to examine sentences carefully to see what is being alleged by the plaintiff or denied by the defendant. The single sentence, “John Doe signed the lease on March 24,” looks simple enough, but still it says several things, some of which may be true and the others false. John Doe may have signed the lease, but not on March 24, and that fact may be important. In short, even a grammatically simple sentence sometimes expresses two or more propositions.

We have said enough to indicate what we mean by the difference between sentences and propositions. They are not related as one to one. Not only can a single sentence express several propositions, either through ambiguity or complexity, but one and the same proposition can also be expressed by two or more different sentences. If you grasp our terms through the words and phrases we use synonymously, you will know that we are

saying the same thing when we say, “Teaching and being taught are correlative functions,” and “Initiating and receiving communication are related processes.”

We are going to stop explaining the grammatical and logical points involved and turn to the rules. The difficulty in this chapter, as in the last, is to stop explaining. Instead, we will assume that you know some grammar. We do not necessarily mean that you must understand everything about syntax, but you should be concerned about the ordering of words in sentences and their relation to one another. Some knowledge of grammar is indispensable to a reader. You cannot begin to deal with terms, propositions, and arguments—the elements of thought—until you can penetrate beneath the surface of language. So long as words, sentences, and paragraphs are opaque and unanalyzed, they are a barrier to, rather than a medium of, communication. You will read words but not receive knowledge.

Here are the rules. The tenth rule of reading, as you will recall from the last

RULE 14. FIND THE IMPORTANT WORDS AND COME TO TERMS. The TENTH rule can be expressed thus:

RULE 15. MARK THE MOST IMPORTANT SENTENCES IN A BOOK AND DISCOVER THE PROPOSITIONS THEY CONTAIN. The seventh rule is this:

RULE 16. LOCATE OR CONSTRUCT THE BASIC ARGUMENTS IN THE BOOK BY FINDING THEM IN THE CONNECTION OF SENTENCES. You will see later why we did not say “paragraphs” in the formulation of this rule.

Incidentally, it is just as true of these new rules as it was of the rule about coming to terms that they apply primarily to expository works. The rules about propositions and arguments are quite different when you are reading a poetical work—a novel, play, or poem. We will discuss the changes that are required in applying them to such works later.

Finding the Key Sentences

Rule 15. MARK THE MOST IMPORTANT SENTENCES IN A BOOK AND DISCOVER THE PROPOSITION THEY CONTAIN.

How does one locate the most important sentences in a book? How, then, does one interpret these sentences to discover the one or more propositions they contain?

Again, we are placing emphasis on what is important. To say that there is only a relatively small number of key sentences in a book does not mean that you need pay no attention to all the rest. Obviously, you have to understand every sentence. But most of the sentences, like most of the words, will cause you no difficulty. As we pointed out in our discussion of reading speeds, you will read them relatively quickly. From your point of view as a reader, the sentences important *for you* are those that require an effort of interpretation because, at first sight, they are not perfectly intelligible. You understand them just well enough to know there is more to understand. They are the sentences that you read much more slowly and carefully than the rest. These may not be the sentences that are most important *for the author,* but they are likely to be, because you are likely to have the greatest difficulty with the most important things the author has to say. And it hardly needs remarking that those are the things you should read most carefully.

From the author's point of view, the important sentences are the ones that express the judgments on which his whole argument rests. A book usually contains much more than the bare statement of an argument, or a series of arguments. The author may explain how he came to the point of view he now holds, or why he thinks his position has serious consequences. He may discuss the words he has to use. He may comment on the work of others. He may indulge in all sorts of supporting and surrounding discussion. But *the heart of his communication lies in the major affirmations and denials he is making, and the reasons he gives for so doing.* To come to grips, therefore, you have to see the main sentences as if they were raised from the page in high relief.

Some authors help you do this. They underline the sentences for you. They either tell you that this is an important point when they make it, or they use one or another typographical device to make their leading sentences stand out. Of course, nothing helps those who will not keep awake while reading. We have met many readers and students who paid no attention even to such clear signs. They preferred to read on rather than stop and examine the important sentences carefully.

There are a few books in which the leading propositions are set forth in sentences that occupy a special place in the order and style of the exposition. Euclid, again, gives us the most obvious example of this. He not only states his definitions, his postulates, and his axioms—his principal propositions—at the beginning, but he also labels every proposition to be proved. You may not understand all of his statements. You may not follow all of his arguments. But you cannot miss the important sentences or the grouping of sentences for the statement of the proofs.

The *Summa Theologica* of St. Thomas Aquinas is another book whose style of exposition puts the leading sentences into high relief. It proceeds by raising questions. Each section is headed by a question. There are many indications of the answer that Aquinas is trying to defend. A whole series of objections opposing the answer is stated. The place where Aquinas begins to argue his own point is marked by the words, “I answer that.” There is no excuse for not being able to locate the important sentences in such a book—those expressing the reasons as well as the conclusions—yet even here it remains all a blur for those readers who treat everything they read as equally important—and read it all at the same speed, either fast or slow. That usually means that everything is equally unimportant.

Apart from books whose style or format calls attention to what most needs interpretation by the reader, the spotting of the important sentences is a job the reader must perform for himself. There are several things he can do. We have already mentioned one. If he is sensitive to the difference between passages he can understand readily and those he cannot, he will probably be able to locate the sentences that carry the main burden of meaning. Perhaps you are beginning to see how essential a part of reading it is to *be perplexed and know it.* Wonder is the beginning of wisdom in learning from books as well as from nature. If you never ask yourself any questions about the meaning of a passage, you cannot expect the book to give you any insight you do not already possess.

Another clue to the important sentences is found in the words that compose them. If you have already marked the important words, they should lead you to the sentences that deserve further attention. Thus the first step in interpretive reading prepares for the second. But the reverse may also be the case. It may be that you will mark certain words only after you have become puzzled by the meaning of a sentence. The fact that we have stated these rules in a fixed order does not mean that you have to follow them in that order. Terms constitute propositions. Propositions contain terms. If you know the terms the words express, you have caught the proposition in the sentence. If you understand the proposition conveyed by a sentence, you have arrived at the terms also.

This suggests one further clue to the location of the principal propositions. They must belong to the main argument of the book. They must be either premises or conclusions. Hence, if you can detect those sentences that seem to form a sequence, a sequence in which there is a beginning and an end, you probably have put your finger on the sentences that are important.

We said a sequence in which there is a beginning and an end. Every argument that men can express in words takes time to state. You may speak a sentence in one breath, but there are pauses in an argument. You have to say one thing first, then another, and then another. An argument begins somewhere, goes somewhere, gets somewhere. It is a movement of thought. It may begin with what is really the conclusion and then proceed to give the reasons for it. Or it may start with the evidence and the reasons and bring you to the conclusion that follows therefrom.

Of course, here as elsewhere, the clue will not work unless you know how to use it. You have to recognize an argument when you see one. Despite some disappointing

experiences, however, we persist in our opinion that the human mind is as naturally sensitive to arguments as the eye is to colors. (There may be some people who are argument-blind!) But the eye will not see if it is not kept open, and the mind will not follow an argument if it is not awake.

Many persons believe that they know how to read because they read at different speeds. But they pause and go slow *over the wrong sentences.* They pause over the sentences that *interest* them rather than the ones that *puzzle* them. Indeed, this is one of the greatest obstacles to reading a book that is not completely contemporary. Any old book contains facts that are somewhat surprising because they are different from what we know. But when you are reading for understanding it is not that kind of novelty that you are seeking. Your interest in the author himself, or in his language, or in the world in which he wrote, is one thing; your concern to understand his ideas is quite another. It is this concern that the rules we are discussing here can help you to satisfy, not your curiosity about other matters.

Finding the Propositions

Rules 16 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

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15. **Complete Works By Aristotle.**

Let us suppose that you have located the leading sentences. Another step is required by **Rule 16**. You must discover the proposition or propositions that each of these sentences contains. This is just another way of saying that you must know what the sentence means. You discover terms by discovering what a word means in a given usage. You discover propositions similarly by interpreting all the words that make up the sentence, and especially its principal words.

Once more, you cannot do this very well unless you know a little grammar. You must know the role that adjectives and adverbs play, how verbs function in relation to nouns, how modifying words and clauses restrict or amplify the meaning of the words they modify, and so forth. Ideally, you should be able to dissect a sentence according to the rules of syntax, although you do not necessarily have to do it in a formal way. Despite the current de-emphasis on teaching grammar in school, we have to assume that you know this much of it. We cannot believe you do not, though you may have grown a little rusty from lack of practice in the rudiments of the art of reading.

There are only two differences between finding the terms that words express and the propositions that sentences express. One is that you employ a larger context in the latter case. You bring all the surrounding sentences to bear on the sentence in question, just as you used the surrounding words to interpret a particular word. In both cases, you proceed from what you do understand to the gradual elucidation of what is at first relatively unintelligible.

The other difference lies in the fact that complicated sentences usually express more than one proposition. You have not completed your interpretation of an important sentence until you have separated out of it all the different, though perhaps related, propositions. Skill in doing this comes with practice. Take some of the complicated sentences in this book and try to state in your own words each of the things that is being asserted. Number them and relate them.

“State in your own words!” That suggests the best test we know for telling whether you have understood the proposition or propositions in the sentence. If, when you are asked to explain what the author means by a particular sentence, all you can do is repeat his very words, with some minor alterations in their order, you had better suspect that you do not know what he means. Ideally, you should be able to say the same thing in totally different words. The idea can, of course, be approximated in varying degrees. But if you cannot get away at all from the author’s words, it shows that *only words* have passed from him to you, *not thought or knowledge.* You know his words, not his mind. He was trying to communicate knowledge, and all you received was words.

The process of translation from a foreign language to English is relevant to the test we have suggested. If you cannot state in an English sentence what a French sentence says, you know you do not understand the meaning of the French. But even if you can, your translation may remain only on the verbal level; for even when you have formed a faithful English replica, you still may not know what the writer of the French sentence was trying to convey.

The translation of one English sentence into another, however, is not merely verbal. The new sentence you have formed is not a verbal replica of the original. If accurate, *it is faithful to the thought alone.* That is why making such translations is the best test you can apply to yourself, if you want to be sure you have digested the proposition, not merely swallowed the words. If you fail the test, you have uncovered a failure of understanding. If you say that you know what the author means, but can only repeat the author's sentence to show that you do, then you would not be able to recognize the author's proposition if it were presented to you in other words.

The author may himself express the same proposition in different words in the course of his writing. The reader who has not seen through the words to the proposition they convey is likely to treat the equivalent sentences as if they were statements of different propositions. Imagine a person who did not know that "2 + 2 = 4" and "4 – 2 = 2" were different notations for the same arithmetic relationship —the relationship of four as the double of two, or two as the half of four.

You would have to conclude that that person simply did not understand the equation. The same conclusion is forced on you concerning yourself or anybody else who cannot tell when equivalent statements of the same proposition are being made, or who cannot himself offer an equivalent statement when he claims to understand the proposition a sentence contains.

These remarks have a bearing on syntopical reading—the reading of several books about the same subject matter. Different authors frequently say the same thing in different words, or different things using almost the same words. The reader who cannot see through the language to the terms and propositions will never be able to compare such related works. Because of their verbal differences, he is likely to misread the authors as disagreeing, or to ignore their real differences because of verbal resemblances in their statements.

There is one other test of whether you understand the proposition in a sentence you have read. Can you point to some experience you have had that the proposition describes or to which the proposition is in any way relevant? Can you exemplify the general truth that has been enunciated by referring to a particular instance of it? To imagine a possible case is often as good as citing an actual one. If you cannot do anything at all to exemplify or illustrate the proposition, either imaginatively or by reference to actual experiences, you should suspect that you do not know what is being said.

Not all propositions are equally susceptible to this test. It may be necessary to have the special experience that only a laboratory can afford to be sure you have grasped certain scientific propositions. But the main point is clear. Propositions do not exist in a vacuum. They refer to the world in which we live. Unless you can show some acquaintance with actual or possible facts to which the proposition refers or is relevant somehow, you are *playing with words,* not dealing with thought and knowledge.

Let us consider one example of this. A basic proposition in metaphysics is expressed by the following words: “Nothing acts except what is actual.” We have heard many students repeat those words to us with an air of satisfied wisdom. They have thought they were discharging their duty to us and to the author by so perfect a verbal repetition. But the sham was obvious as soon as we asked them to state the proposition in other words. Seldom could they say, for instance, that if something does not exist, it cannot do anything. Yet this is an immediately apparent translation —apparent, at least, to anyone who understood the proposition in the original sense.

Failing to get a translation, we would then ask for an exemplification of the proposition. If any one of them told us that grass is not made to grow by merely *possible* showers—that one’s bank account does not increase on account of a merely *possible* raise—we would know that the proposition had been grasped.

The vice of “verbalism” can be defined as the bad habit of using words without regard for the thoughts they should convey and without awareness of the experiences to which they should refer. It is playing with words. As the two tests we have suggested indicate, “verbalism” is the besetting sin of those who fail to read analytically. Such readers never get beyond the words. They possess what they read as a verbal memory that they can recite emptily. One of the charges made by certain modern educators against the liberal arts is that they tend to verbalism, but just the opposite seems to be the case. The failure in reading—the omnipresent verbalism— of those who have not been trained in the arts of grammar and logic shows how lack of such discipline results in slavery to words rather than mastery of them.

Rules 17 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.

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13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Inspectional Reading VII: Superficial Reading

1. Skimming through Audiobook between 190 words per minute to 375 words per minute or between 1.25-2.5 times speed
2. Normally listen audiobook from beginning to end between 190 words per minute to 285 words per minute or between 1.25-1.9 times speed
3. Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed
4. Read or Listen The Full Book Without Stopping
5. Read or listen 25min and 5min break
    - Read or Listen 20 pages an Hour according Mortimer Adler
6. Read or Listen between 1-50 times the book
7. Speed of Audiobook
    - Normally listen audiobook from beginning to end between 150 words per minute to 300 words per minute or between 1-2 times speed.
8. A good speed reading course should therefore teach you to read at many different speeds, not just one speed that is faster than anything you can manage now. It should enable you to vary your rate of reading in accordance with the nature and complexity of the material.
9. Many books are hardly worth even skimming; some should be read quickly; and a few should be read at a rate, usually quite slow, that allows for complete comprehension. It is wasteful to read a book slowly that deserves only a fast reading; speed reading skills can help you solve that problem.
10. With regard to rates of reading, then, the ideal is not merely to be able to read faster, but to be able to read at different speeds—and to know when the different speeds are appropriate. Inspectional reading is accomplished quickly, but that is not only because you read faster, although in fact you do; it is also because you read less of a book when you give it an inspectional reading, and because you read it in a different way, with different goals in mind. Analytical reading is ordinarily much slower than inspectional reading, but even when you are giving a book an analytical reading, you should not read all of it at the same rate of speed. Every book, no matter how difficult, contains interstitial material that can be and should be read quickly; and every good book also contains matter that is difficult and should be read very slowly.

Finding the Arguments

Rule 18. Know the author's arguments, by finding them in, or constructing them out of, sequences of sentences.

The author may be honest in declaring himself on matters of fact or knowledge. We usually proceed in that trust. But unless we are exclusively interested in the author's personality, we should not be satisfied with knowing what his opinions are. His propositions are nothing but expressions of personal opinion unless they are supported by reasons. If it is the book and the subject with which it deals that we are interested in, and not just the author, we want to know not merely what his propositions are, but also why he thinks we should be persuaded to accept them.

The seventeenth rule, therefore, deals with arguments of all sorts. There are many kinds of reasoning, many ways of supporting what one says. Sometimes it is possible to argue that something is true; sometimes no more than a probability can be defended. But every sort of argument consists of a number of statements related in a certain way. This is said because of that. The word "because" here signifies a reason being given.

The presence of arguments is indicated by other words that relate statements, such as: if this is so, then that; or, since this, therefore that; or, it follows from this, that that is the case. In the course of earlier chapters in this book, such sequences occurred. For those of us who are no longer in school, we observed, it is necessary, if we want to go on learning and discovering, to know how to make books teach us well. In that situation, if we want to go on learning, then we must know how to learn from books, which are absent teachers.

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An argument is always a set or series of statements of which some provide the grounds or reasons for what is to be concluded. A paragraph, therefore, or at least a collection of sentences, is required to express an argument. The premises or principles of an argument may not always be stated first, but they are the source of the conclusion, nevertheless. If the argument is valid, the conclusion follows from the premises. That does not necessarily mean that the conclusion is true, since one or all of the premises that support it may be false.

Not every sentence in a book expresses a proposition. For one thing, some sentences express questions. They state problems rather than answers. Propositions are the answers to questions. They are declarations of knowledge or opinion. That is why we call sentences that express them declarative, and distinguish sentences that ask questions as interrogative. Other sentences express wishes or intentions. They may give us some knowledge of the author's purpose, but they do not convey the knowledge he is trying to expound.

Moreover, not all the declarative sentences can be read as if each expressed one proposition. There are at least two reasons for this. The first is the fact that words are ambiguous and can be used in various sentences. Thus, it is possible for the same sentence to express different propositions if there is a shift in the terms the words express. "Reading is learning" is a simple sentence; but if at one place we mean by "learning" the acquisition of information, and at another we mean the development of understanding, the proposition is not the same, because the terms are different. Yet the sentence is the same.

The second reason is that all sentences are not as simple as "Reading is learning." When its words are used unambiguously, a simple sentence usually expresses a single proposition. But even when its words are used unambiguously, a compound sentence expresses two or more propositions. A compound sentence is really a collection of sentences, connected by such words as "and," or "if . . . then," or "not only . . . but also." You may rightly conclude that the line between a long compound sentence and a short paragraph may be difficult to draw. A compound sentence can express a number of propositions related in the form of an argument.

We have spent enough time on propositions. Let us now turn to the seventh rule of analytical reading, which requires the reader to deal with collections of sentences. We said before that there was a reason for not formulating this rule of interpretation by saying that the reader should find the most important paragraphs. The reason is that there are no settled conventions among writers about how to construct paragraphs. Some great writers, such as Montaigne, Locke, or Proust, write extremely long paragraphs; others, such as Machiavelli, Hobbes, or Tolstoy, write relatively short ones. In recent times, under the influence of newspaper and magazine style, most writers tend to cut their paragraphs to fit quick and easy reading. This paragraph, for instance, is probably too long. If we had wanted to coddle our readers, we should have started a new one with the words, "Some great writers."

It is not merely a matter of length. The point that is troublesome here has to do with the relation between language and thought. The logical unit to which the seventh rule directs our reading is the argument—a sequence of propositions, some of which give reasons for another. This logical unit is not uniquely related to any recognizable unit of writing, as terms are related to words and phrases, and propositions to sentences. An

argument may be expressed in a single complicated sentence. Or it may be expressed in a number of sentences that are only part of one paragraph. Sometimes an argument may coincide with a paragraph, but it may also happen that an argument runs through several or many paragraphs.

There is one further difficulty. *There are many paragraphs in any book that do not express an argument at all*—perhaps not even part of one. They may consist of collections of sentences that detail evidence or report how the evidence has been gathered. As there are sentences that are of secondary importance, because they are merely digressions or side remarks, so also can there be paragraphs of this sort. It hardly needs to be said that they should be read rather quickly.

Because of all this, we suggest another formulation of RULE 19, as follows: FIND IF YOU CAN THE PARAGRAPHS IN A BOOK THAT STATE ITS IMPORTANT ARGUMENTS; BUT IF THE ARGUMENTS ARE NOT THUS EXPRESSED, YOUR TASK IS TO CONSTRUCT THEM, BY TAKING A SENTENCE FROM THIS PARAGRAPH, AND ONE FROM THAT, UNTIL YOU HAVE GATHERED TOGETHER THE SEQUENCE OF SENTENCES THAT STATE THE PROPOSITIONS THAT COMPOSE THE ARGUMENT.

After you have discovered the leading sentences, the construction of paragraphs should be relatively easy. There are various ways of doing this. You can do it by actually writing out on a piece of paper the propositions that together form an argument. But usually a better way, as we have already suggested, is to put numbers in the margin, together with other marks, to indicate the places where the sentences occur that should be tied together in a sequence.

Authors are more or less helpful to their readers in this matter of making the arguments plain. Good expository authors try to reveal, not conceal, their thought. Yet not even all good authors do this in the same way. Some, such as Euclid, Galileo, Newton (authors who write in a geometrical or mathematical style), come close to the ideal of making a single paragraph an argumentative unit. The style of most writing in non-mathematical fields tends to present two or more arguments in a single paragraph or to have an argument run through several.

In proportion as a book is more loosely constructed, the paragraphs tend to become more diffuse. You often have to search through all the paragraphs of a chapter to find the sentences you can construct into a statement of a single argument. Some books make you search in vain, and some do not even encourage the search.

A good book usually summarizes itself as its arguments develop. If the author summarizes his arguments for you at the end of a chapter, or at the end of an elaborate section, you should be able to look back over the preceding pages and find the materials he has brought together in the summary. In *The Origin of Species,* Darwin summarizes his whole argument for the reader in a last chapter, entitled “Recapitulation and Conclusion.” The reader who has worked through the book deserves that help. The one who has not cannot use it.

Incidentally, if you have inspected the book well before beginning to read it analytically, you will know whether the summary passages exist and if they do, where they are. You can then make the best possible use of them when interpreting the book.

Another sign of a bad or loosely constructed book is the omission of steps in an argument. Sometimes they can be omitted without damage or inconvenience, because the propositions left out can be generally supplied from the common knowledge of readers. But sometimes their omission is misleading, and may even be intended to mislead. One of the most familiar tricks of the orator or propagandist is to leave certain things unsaid, things that are highly relevant to the argument, but that might be challenged if they were made explicit. While we do not expect such devices in an honest author whose aim is to instruct us, it is nevertheless a sound maxim of careful reading to make every step in an argument explicit.

Whatever kind of book it is, your obligation as a reader remains the same. If the book contains arguments, you must know what they are, and be able to put them into a nutshell. Any good argument can be put into a nutshell. There are, of course, arguments built upon arguments. In the course of an elaborate analysis, one thing may be proved in order to prove another, and this may be used in turn to make a still further point. The units of reasoning, however, are single arguments. If you can find these in any book you are reading, you are not likely to miss the larger sequences.

This is all very well to say, you may object, but unless one knows the structure of arguments as a logician does, how can one be expected to find them in a book, or worse, to construct them when the author does not state them compactly in a single paragraph?

The answer is that it must be obvious that you do not have to know about arguments “as a logician does.” There are relatively few logicians in the world, for better or for worse. Most of the books that convey knowledge and can instruct us contain arguments. They are intended for the general reader, not for specialists in logic.

No great logical competence is needed to read these books. To repeat what we said before, the nature of the human mind is such that if it works at all during the process of reading, if it comes to terms with the author and reaches his propositions, it will see his arguments as well.

There are, however, a few things we can say that may be helpful to you in carrying out this rule of reading. *In the first place,* remember that every argument must involve a number of statements. Of these, some give the reasons why you should accept a conclusion the author is proposing. If you find the conclusion first, then look for the reasons. If you find the reasons first, see where they lead.

***In the second place,* discriminate between the kind of argument that points to one or more particular facts as evidence for some generalisation and the kind that offers a series of general statements to prove some further generalisations. The former kind of reasoning is usually referred to as inductive, the latter as deductive;**

but the names are not what is important. What is important is the ability to discriminate between the two.

In the literature of science, this distinction is observed whenever the difference is emphasized between the proof of a proposition by reasoning and its establishment by experiment. Galileo, in his *Two New Sciences,* speaks of illustrating by experiment conclusions that have already been reached by mathematical demonstration. And in a concluding chapter of his book *On the Motion of the Heart,* the great physiologist William Harvey writes: “It has been shown by reason and experiment that blood by the beat of the ventricles flows through the lungs and heart and is pumped to the whole body.” Sometimes it is possible to support a proposition both by reasoning from other general truths and by offering experimental evidence. Sometimes only one method of argument is available.

***In the third place,* observe what things the author says he must *assume,* what he says can be *proved* or otherwise evidenced, and what need not be proved because it is *self-evident.* He may honestly try to tell you what all his assumptions are, or he may just as honestly leave you to find them out for yourself. Obviously, not everything can be proved, just as not everything can be defined. If every proposition had to be proved, there would be no beginning to any proof. Such things as axioms and assumptions or postulates are needed for the proof of other propositions. If these other propositions are proved, they can, of course, be used as premises in further proofs.**

Every line of argument, in other words, must start somewhere. Basically, there are two ways or places in which it can start: with *assumptions* agreed on between writer and reader, or with what are called *self-evident propositions,* which neither the writer nor reader can deny. In the first case, the assumptions can be anything, so long as agreement exists. The second case requires some further comment here.

In recent times, it has become commonplace to refer to self-evident propositions as “tautologies”; the feeling behind the term is sometimes one of contempt for the trivial, or a suspicion of legerdemain. Rabbits are being pulled out of a hat. You put the truth in by defining your words, and then pull it out as if you were surprised to find it there. That, however, is not always the case.

For example, there is a considerable difference between a proposition such as “a father of a father is a grandfather,” and a proposition such as “the whole is greater than its parts.” The former statement *is* a tautology; the proposition is contained in the definition of the words; it only thinly conceals the verbal stipulation, “Let us call the parent of a parent a ‘grandparent.’ ” But that is far from being the case with the second proposition. Let us try to see why.

The statement, “The whole is greater than its parts,” expresses our understanding of things as they are and of their relationships, which would be the same no matter what words we used or how we set up our linguistic conventions. Finite quantitative wholes exist and they have definite finite parts; for example, this page can be cut in half or in quarters.

Now, as we understand a finite whole (that is, any finite whole) and as we understand a definite part of a finite whole, we understand the whole to be greater than the part, or the part to be less than the whole. So far is this from being a mere verbal matter that we cannot define the meaning of the words “whole” and “part”; these words express primitive or indefinable notions. As we are unable to define them *separately,* all we can do is express our understanding of whole and part by a statement of how wholes and parts are *related.*

The statement is axiomatic or self-evident in the sense that its opposite is immediately seen to be false. We can use the word “part” for this page, and the word “whole” for a half of this page after cutting it in two, but we cannot think that the page before it is cut is less than the half of it that we have in our hand after we have cut it. However we use language, our understanding of finite wholes and their definite parts is such that we are compelled to say that we know that the whole is greater than the part, and what we know is the relation between existent wholes and their parts, not something about the use of words or their meanings.

Such self-evident propositions, then, have the status of indemonstrable but also undeniable truths. They are based on common experience alone and are part of common-sense knowledge, for they belong to no organized body of knowledge; they do not belong to philosophy or mathematics any more than they belong to science or history. That is why, incidentally, Euclid called them “common notions.” They are also instructive, despite the fact that Locke, for example, did not think they were. He could see no difference between a proposition that really does not instruct, such as the one about the grandparent, and one that does—one that teaches us something we would not otherwise know—such as the one about parts and wholes. And those moderns who refer to all such propositions as tautologies make the same mistake. They do not see that some of the propositions they call “tautologies” really add to our knowledge, while others, of course, do not.

Rules 20 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

1. **Introduction to Logic by Patrick Hurley.**
2. **Handbook of Logic and language by J van Benthem.**
3. **Introduction to logic and critical thinking by Merrilee h Salmon.**
4. **Logically Fallacious By Bo BENNET.**
5. **Modal Logic by Patrick Blackburn.**
6. **Modal Logic by Brian Chellas.**
7. **Symbolic Logic By Tony Roy.**
8. **A System of Logic by John Stuart Mill.**
9. **Argumentation and Debate by austin Freely.**
10. **Critical Thinking, reading and Writing by Sylvan Barnett.**
11. **Critical Thinking- The Art of Argument.**
12. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies.**
13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Rules 21-Premises, Conclusions, Assumptions, Arguments, Logic

A. Did the author used non arguments:
    - Question.
    - Command.
    - Reports.
    - Piece of advice.
    - Warnings.
    - Statements of belief.
    - Statements of opinion.
    - Explanation.
    - Instructions.
    - Expository passages.
    - Loosely associated statement.
B. Make a list of arguments used by author, presenter, talker provided.
C. How many arguments have/has the author, presenter, talker provided?
D. What are the assumption of the author on the topic?
E. What are the premises of the author on the topic?
    - Is the argument truth or false?
F. What are the premise indicators:
    - Since- as indicated by.
    - Because- the reason is that.
    - For- for the reason that.
    - As- may be inferred from.
    - Follows from- may be derived from.
    - As shown by- may be deduced from.
    - Inasmuch as- in view of the facts that.
    - On the assumption that.
    - If.
    - If we assume that.
    - If we suppose that\in the view of the fact that.
    - As shown by.
    - As indicated by.
    - The reason is that.
    - For the reason that.
    - For this reason.

G. What is the conclusion of the author on the topic?

H. What are the conclusion indicator?

- Therefore- for these reasons.
- Hence- it follows that.
- So- I conclude that.
- Accordingly- which shows that.
- In consequence- which means that.
- Consequently- which entails that.
- Proves that- which implies that.
- As a result- which allows us to infer that.
- For this reason- which points to the conclusion that.
- Thus- we may infer.
- It follows.
- Which shows.
- So.
- Then (after if).
- Indicates that.
- Implies that.
- Entails that.
- So you can see that.
- We can conclude that.
- We can infer that.
- We may deduce that.
- Points to the conclusion that.
- Which means that.
- Which shows that.
- Leads one to believe that.
- Bears out the point that.
- Proves that.
- Thus.
- As a result.
- Accordingly.
- For this reason (followed by a comma).

I. What are the arguments of the author on the topic?
    - Is the argument valid or invalid.

J. How did the author came up with this conclusion?

K. Use each chapter of the book while finding the arguments.
    - Basic Concepts.
    - Language and definition.
    - Informal Fallacies.
    - Categorical Propositions.
    - Categorical Syllogism.
    - Propositional Logic.
    - Natural Deduction in Propositional Logic.
    - Predicate Logic.
    - Analogy and Legal and Moral Reasoning.
    - Causality and Mill's Reasoning.
    - Probability.
    - Statistical Reasoning.
    - Hypothetical Scientific Reasoning.
    - Science and Superstition.

L. Did the author used:
    - Philosophical Logic.
    - Mathematical Logic.
    - Computational Logic.
    - Formal Logic.
    - Informal Logic.
    - Inductive.
    - Deductive.
    - Propositional logic.
    - Predicate logic.
    - Modal logic.
    - Non classical logic.
    - Symbolic Logic.

M. Did the Author diagrammed his own argument?

N. Did the author diagrammed opposite arguments?

O. Square of the Opposition.
P. Contradictions.
Q. Categorical propositions.
R. Categorical Syllogism.
S. Hypothetical Syllogism.
T. Proof of Invalidity.
U. Analogical Reasoning.
V. Causal Reasoning.
W. Cause and Effect.
X. Use the following:.
    - What?
    - Who?
    - Why?
    - When?
    - Where?
    - How?
    - How not?
    - Do?
    - Do not?
    - Did?
    - Did not?
    - Can?
    - Can not?
    - May?
    - May not?
    - Might?
    - Might not?
    - Does?
    - Does not?

Determining an Author's Logical Fallacies

Rules 22-Find the Fallacies if there is any

A. List of the Logical fallacies used by the author, presenter, speaker, writer?
B. What classification of fallacies did the author, speaker, presenter, writer used?
C. What Logical fallacies did the author used?
D. What are the evidence of the logical fallacies? Show in the book, presentation, articles etc.
E. Review every single fallacy and review if they committed one of the fallacy.
F. Be honest if they did and advise, where did they make the fallacy and show evidence where the proof of the fallacy.
G. What are the reason of the logical fallacies? Show in the book, presentation, articles etc.
H. Did the author used logical fallacy in any of the presentation, writing, speech, talk, discussion, debate etc.
I. Give example of similar logical fallacies.
J. Did the author used logical fallacy in any of the presentation, writing, speech, talk, discussion, debate etc.

Rules 23 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
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13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Determining Context, Author's Facts and Evidence Supporting Argument

Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context?

Facts within The Context.

Rules 24 What are the Facts supporting Author's arguments

A. Listen or reading Facts Within Context.
B. What facts the author provided? Make a list.
C. What author provided? Make a list.

Rules 25 What are the Figures supporting Author's arguments

A. Listen or reading figures.
B. What figures does the author provided? Make a list.
C. What statistics does the author provided? Make a list.
D. What formulas does the author provided? Make a list.
E. What mathematical results the author provided? Make a list.
F. What author provided? Make a list.

Rules 26 What are the evidence supporting Author's arguments

A. Listen or reading Facts, figures and ideas.
B. What evidence does the author provided? Make a list.
C. What author provided? Make a list.

Rules 27 Do the Fact Checking

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:
   - Wikipedia
   - E-book
   - Books about autobiography and Biography
   - Websites
   - University
   - Books
   - Audiobooks
   - Handbooks
   - Dictionary
   - Cross References
   - Atlas
   - Commentaries
   - Articles
   - Journals
   - Newspapers
   - Websites
   - Harvard business review
   - Google professor manual

- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance

- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC

- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking
B. Does the Author provided the list of sources citation?

Author Bias and Unbiased

Rules 28 Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?

P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?
Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

Determining an Author's Sources

Rules 29 Sources the author used

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Checking Each Fact's Sources, If they Are Reliable or Unreliable.

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.
    34. Eyewitness.

35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks, Commentaries
        - Magazines and newspaper articles
        - Website
    8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

Analysis of Opposing Side Arguments

Rules 30 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

1. **Introduction to Logic by Patrick Hurley.**
2. **Handbook of Logic and language by J van Benthem.**
3. **Introduction to logic and critical thinking by Merrilee h Salmon.**
4. **Logically Fallacious By Bo BENNET.**
5. **Modal Logic by Patrick Blackburn.**
6. **Modal Logic by Brian Chellas.**
7. **Symbolic Logic By Tony Roy.**
8. **A System of Logic by John Stuart Mill.**
9. **Argumentation and Debate by austin Freely.**
10. **Critical Thinking, reading and Writing by Sylvan Barnett.**
11. **Critical Thinking- The Art of Argument.**
12. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies.**
13. **Logic Complete Introduction.**

14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Rules 31-Premises, Conclusions, Assumptions, Arguments, Logic

A. Did the author used non arguments:
   - Question.
   - Command.
   - Reports.
   - Piece of advise.
   - Warnings.
   - Statements of belief.
   - Statements of opinion.
   - Explanation.
   - Instructions.
   - Expository passages.
   - Loosely associated statement.

B. Make a list of arguments used by author, presenter, talker provided.

C. How many arguments have/has the author, presenter, talker provided?

D. What are the assumption of the author on the topic?

E. What are the premises of the author on the topic?
   - Is the argument truth or false?

F. What are the premise indicators:
   - Since- as indicated by.
   - Because- the reason is that.
   - For- for the reason that.
   - As- may be inferred from.
   - Follows from- may be derived from.
   - As shown by- may be deduced from.
   - Inasmuch as- in view of the facts that.
   - On the assumption that.
   - If.
   - If we assume that.
   - If we suppose that\in the view of the fact that.
   - As shown by.

- As indicated by.
- The reason is that.
- For the reason that.
- For this reason.

G. What is the conclusion of the author on the topic?

H. What are the conclusion indicator?
- Therefore- for these reasons.
- Hence- it follows that.
- So- I conclude that.
- Accordingly- which shows that.
- In consequence- which means that.
- Consequently- which entails that.
- Proves that- which implies that.
- As a result- which allows us to infer that.
- For this reason- which points to the conclusion that.
- Thus- we may infer.
- It follows.
- Which shows.
- So.
- Then (after if).
- Indicates that.
- Implies that.
- Entails that.
- So you can see that.
- We can conclude that.
- We can infer that.
- We may deduce that.
- Points to the conclusion that.
- Which means that.
- Which shows that.
- Leads one to believe that.
- Bears out the point that.
- Proves that.
- Thus.

- As a result.
- Accordingly.
- For this reason (followed by a comma).

I. What are the arguments of the author on the topic?
    - Is the argument valid or invalid.

J. How did the author came up with this conclusion?

K. Use each chapter of the book while finding the arguments
    - Basic Concepts.
    - Language and definition.
    - Informal Fallacies.
    - Categorical Propositions.
    - Categorical Syllogism.
    - Propositional Logic.
    - Natural Deduction in Propositional Logic.
    - Predicate Logic.
    - Analogy and Legal and Moral Reasoning.
    - Causality and Mill’s Reasoning.
    - Probability.
    - Statistical Reasoning.
    - Hypothetical Scientific Reasoning.
    - Science and Superstition.

L. Did the author used:
    - Philosophical Logic
    - Mathematical Logic
    - Computational Logic
    - Formal Logic
    - Informal Logic
    - Inductive
    - Deductive
    - Propositional logic
    - Predicate logic
    - Modal logic
    - Non classical logic

- Symbolic Logic

M. Did the Author diagrammed his own argument?
N. Did the author diagrammed opposite arguments?
O. Square of the Opposition.
P. Contradictions.
Q. Categorical propositions.
R. Categorical Syllogism.
S. Hypothetical Syllogism.
T. Proof of Invalidity.
U. Analogical Reasoning.
V. Causal Reasoning.
W. Cause and Effect.
X. Use the following:
    - What?
    - Who?
    - Why?
    - When?
    - Where?
    - How?
    - How not?
    - Do?
    - Do not?
    - Did?
    - Did not?
    - Can?
    - Can not?
    - May?
    - May not?
    - Might?
    - Might not?
    - Does?
    - Does not ?

Y. Did author carefully reviewed the arguments and objections?

Z. Did author very careful tried how to answer these objections? Did author correctly understood these objections?

AA. Did author take the best arguments from opposing side on the topic, book, argument, facts from opposite side.

BB. Does the author, presenter, speaker, writer calling opposing person by name to discredit him/her/ them?

Rules 32 Review and analyze text in logical way. There are number of things I will look when analyse and review text in Logical way:

A. Basic Concepts.
B. Language and definition.
C. Informal Fallacies.
D. Categorical Propositions.
E. Categorical Syllogism.
F. Propositional Logic.
G. Natural Deduction in Propositional Logic.
H. Predicate Logic.
I. Analogy and Legal and Moral Reasoning.
J. Causality and Mill's Reasoning.
K. Probability.
L. Statistical Reasoning.
M. Hypothetical Scientific Reasoning.
N. Science and Superstition.

Logic

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9. **Argumentation and Debate by austin Freely.**
10. **Critical Thinking, reading and Writing by Sylvan Barnett.**
11. **Critical Thinking- The Art of Argument.**
12. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies.**
13. **Logic Complete Introduction.**
14. **Socratic Logic A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.**
15. **Complete Works By Aristotle.**

Analysis of Opposing Side Logical Fallacies

Rules 33-Find the Fallacies if there is any

A. List of the Logical fallacies used by the author, presenter, speaker, writer?
B. What classification of fallacies did the author, speaker, presenter, writer used?
C. What Logical fallacies did the author used?
D. What are the evidence of the logical fallacies? Show in the book, presentation, articles etc.
E. Review every single fallacy and review if they committed one of the fallacy.
F. Be honest if they did and advise, where did they make the fallacy and show evidence where the proof of the fallacy.
G. What are the reason of the logical fallacies? Show in the book, presentation, articles etc.
H. Did the author used logical fallacy in any of the presentation, writing, speech, talk, discussion, debate etc..
I. Give example of similar logical fallacies.
J. Did the author used logical fallacy in any of the presentation, writing, speech, talk, discussion, debate etc.

Analysis of Opposing Side Facts and Evidence Supporting Argument

Rules 34 What are the Facts supporting Author's arguments

A. Listen or reading Facts.
B. What facts the author provided? Make a list.
C. What author provided? Make a list.

Rules 35 What are the Figures supporting Author's arguments

A. Listen or reading figures.
B. What figures does the author provided? Make a list.
C. What statistics does the author provided? Make a list.
D. What formulas does the author provided? Make a list.
E. What mathematical results the author provided? Make a list.
F. What author provided? Make a list.

Rules 36 What are the evidence supporting Author's arguments

A. Listen or reading Facts, figures and ideas.
B. What evidence does the author provided? Make a list.
C. What author provided? Make a list.

Rules 37 Do the Fact Checking

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:
   - Wikipedia
   - E-book
   - Books about autobiography and Biography
   - Websites
   - University
   - Books
   - Audiobooks
   - Handbooks
   - Dictionary
   - Cross References
   - Atlas
   - Commentaries
   - Articles

- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy

- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels

- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

Analysis of Opposing Side Bias and Unbiased

Rules 38 Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?

P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?
Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

Analysis of Opposing Side Sources They Used

Rules 39 Sources the author used

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used
C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Checking Each Fact's Sources, If they Are Reliable or Unreliable.

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research
    2. Diaries and journals
    3. Letters and memos
    4. Autobiographies and memoirs
    5. Books or articles written at the time of event?
    6. Government documents
    7. Census statistics
    8. Organisational records
    9. Documentaries
    10. photographs, art (from the time period)
    11. Maps (from the period)
    12. Patents
    13. Theses
    14. Dissertations
    15. Photographs
    16. Journal articles
    17. Newspaper articles
    18. Survey research research
    19. Meetings
    20. Symposia
    21. Original documents
    22. Records of organisation
    23. Internet
    24. Email
    25. Communication in listservs
    26. Interviews
    27. Video recordings
    28. Audio recordings
    29. Websites
    30. Communication through social media
    31. Artefacts
    32. Reports
    33. Works of art and architecture
    34. Eyewitness

35. Statistics
36. Oral history
37. Description of travel
38. Cartoon
39. Postcards
40. Posters
41. Internet communications
42. Any above reprinted in the original formal and language

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories

Analysis of Analysis of the Author, Writer, Presenter of opposing Arguments.

Rules 40 Analyse of the analysis of the author, writer, presenter.

A. Has the author carefully reviewed the opposing arguments in comparison to their own?
B. Did author take the best arguments from opposing side on the topic, book, argument, facts from opposite side.
C. Did author PROVIDE THE BEST arguments against the opposing side and provide: best analysis, did not make any fallacies, honest and in the context analysis, provide correct facts, statistics.
D. Find out what ideologies behind these arguments?
E. Did the author correctly understood these objections?
F. Has the author carefully thought out the answer to the objections?
G. Did the author presenter, speaker, critic used tricks to get an attention from the audience? What was this/these tricks?
H. Did the author used logical fallacies in any of the analysis of the opposing side in their presentation. Writing, speech, talk, debate.
I. What logical fallacies did the author used in analysis.
J. Did the author tried the best to criticise fairly the arguments, conclusion, topic, books, or articles?
K. Did the Author used incorrect facts, statistics, information in presentation, writing, speech, talk, discussion, debate etc
L. Where did the author used incorrect information, statistics, facts or made logical fallacy in presentation, writing, speech, talk, discussion, debate etc.
M. What other sources did the author used in order to answer the objections to opposing side arguments.
N. Did the author tired to provoke some sort of emotions, feelings?
O. Does the author, presenter, speaker, writer calling opposing person by name to discredit him, her, them?
P. Why do they want to discredit?
Q. Did the author used all AVAILABLE SOURCES, INFORMATION, FACTS AND ARGUMENTS TO HIM/HER.
R. Does the author trying to rewrite facts, information, history of the subject to fit his/her arguments and situation?

S. Did the author do honest analysis of all available sources, information, arguments, evidence and facts?
T. Did the author Use socratic method and questions and tactics in their approach?
U. Did author represent other side honestly.
V. Did author represent other side argument in full and without any omit information?

Finding the Solutions

These three rules of analytical reading—about terms, propositions, and arguments —can be brought to a head in an eighth rule, which governs the last step in the interpretation of a book's content. More than that, it ties together the first stage of analytical reading (outlining the structure) and the second stage (interpreting the contents).

Rule 41. Determine which of his problems the author has solved, and which he has not; and as to the latter, decide which the author knew he had failed to solve. The last step in your attempt to discover what a book is about was the discovery of the major problems that the author tried to solve in the course of his book. (As you will recall, this was covered by Rule 4.) Now, after you have come to terms with him and grasped his propositions and arguments, you should check what you have found by addressing yourself to some further questions. Which of the problems that the author tried to solve did he succeed in solving? In the course of solving these, did he raise any new ones? Of the problems that he failed to solve, old or new, which did the author himself know he had failed on? A good writer, like a good reader, should know whether a problem has been solved or not, although of course it is likely to cost the reader less pain to acknowledge the situation.

This final step in interpretive reading is covered by RULE 42. FIND OUT WHAT THE AUTHOR'S SOLUTIONS ARE. When you have applied this rule, and the three that precede it in interpretive reading, you can feel reasonably sure that you have managed to understand the book. If you started with a book that was over your head —one, therefore, that was able to teach you something—you have come a long way. More than that, you are now able to complete your analytical reading of the book. The third and last stage of the job will be relatively easy. You have been keeping your eyes and your mind open and your mouth shut. Up to this point, you have been following the author. From this point on, you are going to have a chance to argue with the author and express yourself.

The Second Stage of Analytical Reading

We have now described the second stage of analytical reading. Another way to say this is that we have now set forth the materials for answering the second basic question that you must ask about a book, or indeed anything that you read. You will recall that that second question is *What is being said in detail, and how?* Applying Rules 5 through 8 clearly helps you to answer this question. When you have come to terms with the author, found his key propositions and arguments, and identified his solutions of the problems that he faced, you will know what he is saying in his book, and you are thus prepared to go on to ask the final two basic questions about it.

Since we have now completed another stage in the analytical reading process, let us, as before, pause a moment to write out the rules of this stage for review.

THE SECOND STAGE OF ANALYTICAL READING, OR RULES FOR FINDING WHAT A BOOK SAYS (INTERPRETING ITS CONTENTS)

5. Come to terms with the author by interpreting his key words.

6. Grasp the author's leading propositions by dealing with his most important sentences.

7. Know the author's arguments, by finding them in, or constructing them out of, sequences of sentences.

8. Determine which of his problems the author has solved, and which he has not; and as to the latter, decide which the author knew he had failed to solve.

Criticising a Book Fairly

We said at the end of the last chapter that we had come a long way. We have learned how to outline a book. We have learned the four rules for interpreting a book's contents. We are now ready for the last stage of analytical reading. Here you will reap the reward of all your previous efforts.

Reading a book is a kind of conversation. You may think it is not conversation at all, because the author does all the talking and you have nothing to say. If you think that, you do not realise your full obligation as a reader—and you are not grasping your opportunities.

As a matter of fact, the reader is the one who has the last word. The author has had his say, and then it is the reader's turn. The conversation between a book and its reader would appear to be an orderly one, each party talking in turn, no interruptions, and so forth. If, however, the reader is undisciplined and impolite, it may be anything but orderly. The poor author cannot defend himself. He cannot say, "Here, wait till I've finished, before you start disagreeing." He cannot protest that the reader has misunderstood him, has missed his point.

Ordinary conversations between persons who confront each other are good only when they are carried on civilly. We are not thinking merely of the civilities according to conventions of social politeness. Such conventions are not really important. What is important is that there is an *intellectual* etiquette to be observed. Without it, conversation is bickering rather than profitable communication. We are assuming here, of course, that the conversation is about a serious matter on which men can agree or disagree. Then it becomes important that they conduct themselves well. Otherwise, there is no profit in the enterprise. The profit in good conversation is something learned.

What is true of ordinary conversation is even more true of the rather special situation in which a book has talked to a reader and the reader talks back. That the author is well disciplined, we will take for granted temporarily. That he has conducted his part of the conversation well can be assumed in the case of good books. What *can* the reader do to reciprocate? What *must* he do to hold up his end well?

The reader has an obligation as well as an opportunity to talk back. The opportunity is clear. Nothing can stop a reader from pronouncing judgment. The roots of the obligation, however, lie a little deeper in the nature of the relation between books and readers.

If the book is of the sort that conveys knowledge, the author's aim was to instruct. He has tried to teach. He has tried to convince or persuade his reader about something. His effort is crowned with success only if the reader finally says, "I am taught. You have convinced me that such and such is true, or persuaded me that it is probable." But even if the reader is not convinced or persuaded, the

author's intention and effort should be respected. The reader owes him a considered judgment. If he cannot say, "I agree," he should at least have grounds for disagreeing or even for suspending judgment on the question.

We are really saying no more than what we have already said many times. A good book deserves an active reading. The activity of reading does not stop with the work of understanding what a book says. *It must be completed by the work of criticism, the work of judging.* The undemanding reader fails to satisfy this requirement, probably even more than he fails to analyze and interpret. He not only makes no effort to understand; he also dismisses a book simply by putting it aside and forgetting it. Worse than faintly praising it, he damns it by giving it no critical consideration whatever.

Teachability as a Virtue

What we mean by talking back is not something apart from reading. It is the third stage in the analytical reading of a book; and there are rules here as in the case of the first two stages. Some of these rules are general maxims of intellectual etiquette. We will deal with them in this chapter. Others are more specific criteria for defining points of criticism. They will be discussed in the next chapter.

There is a tendency to think that a good book is above the criticism of the average reader. The reader and the author are not peers. The author, according to this view, should be subjected to a trial only by a jury of his peers. Remember Bacon's recommendation to the reader: "Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider." Sir Walter Scott casts even more dire aspersions on those "who read to doubt or read to scorn."

There is a certain truth here, of course, but there is also a good deal of nonsense about the aura of impeccability with which books are thus surrounded, and the false piety it produces. Readers may be like children, in the sense that great authors can teach them, but that does not mean they must not be heard from. Cervantes may or not have been right in saying, "There is no book so bad but something good may be found in it." It is more certain that there is no book so good that no fault can be found with it.

It is true that a book that can enlighten its readers, and is in this sense superior to them, should not be criticised by them until they understand it. When they do, they have elevated themselves almost to equality with the author. Now they are fit to exercise the rights and privileges of their new position. Unless they exercise their critical faculties now, they are doing the author an injustice. He has done what he could to make them his equal. He deserves that they act like his peers, that they engage in conversation with him, that they talk back.

We are discussing here the virtue of teachability—a virtue that is almost always misunderstood. Teachability is often confused with subservience. A person is wrongly thought to be teachable if he is passive and pliable. On the contrary, teachability is an extremely active virtue. No one is really teachable who does not freely exercise his power

of independent judgment. He can be trained, perhaps, but not taught. *The most teachable reader is, therefore, the most critical.* He is the reader who finally responds to a book by the greatest effort to make up his own mind on the matters the author has discussed.

We say “finally” because teachability requires that a teacher be fully heard and, more than that, understood before he is judged. We should add also that sheer amount of effort is not an adequate criterion of teachability. The reader must know *how* to judge a book, just as he must know how to arrive at an understanding of its contents. This third group of rules for reading, then, is a guide to the last stage in the disciplined exercise of teachability.

The Role of Rhetoric

We have everywhere found a certain reciprocity between the art of teaching and the art of being taught, between the skill of the author that makes him a considerate writer and the skill of the reader that makes him handle a book with consideration. We have seen how the same principles of grammar and logic underlie rules of good writing as well as rules of good reading. The rules we have so far discussed concern the achievement of intelligibility on the part of the writer and the achievement of understanding on the part of the reader. This last set of rules goes beyond understanding to critical judgment. Here is where rhetoric comes in.

There are, of course, many uses of rhetoric. We usually think of it in connection with the orator or the propagandist. But in its most general significance, rhetoric is involved in every situation in which communication takes place among human beings. If we are the talkers, we wish not only to be understood but also to be agreed with in some sense. If our purpose in trying to communicate is serious, we wish to convince or persuade—more precisely, to convince about theoretical matters and to persuade about matters that ultimately affect action or feeling.

To be equally serious in receiving such communication, one must be not only a *responsive* but also a *responsible* listener. You are responsive to the extent that you follow what has been said and note the intention that prompts it. But you also have the responsibility of taking a position. When you take it, it is yours, not the author’s. To regard anyone except yourself as responsible for your judgment is to be a slave, not a free man. It is from this fact that the liberal arts acquire their name.

On the part of the speaker or writer, rhetorical skill is knowing how to convince or persuade. Since this is the ultimate end in view, all the other aspects of communication must serve it. Grammatical and logical skill in writing clearly and intelligibly has merit in itself, but it is also a means to an end. Reciprocally, on the part of the reader or listener, rhetorical skill is knowing how to react to anyone who tries to convince or persuade us. Here, too, grammatical and logical skill, which enables us to understand what is being said, prepares the way for a critical reaction.

RULE 43. Rhetorical Analysis Of The Text.

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:
   - Rhetoric By Aristotle.
   - A Companion to Rhetoric and Rhetorical Criticism.
   - Ancient Rhetoric From Aristotle to Philostratus.
   - Ancient Rhetoric For Contemporary Students by Sharon Crowley.
   - Art Of Rhetoric By Aristotle.
   - Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
   - Encyclopaedia of Rhetoric.
   - On Rhetoric: Theory of Civic Discourse by Aristotle.
   - Politics and Rhetoric: The Persuasive Power of Metaphor.
   - Rhetoric By Jennifer Richards.
   - Rhetoric In Details By John Benjamins.
   - Rhetorical Grammar By Martha Kolln.
   - Sourcebook on Rhetoric By James Jasinski.
   - The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
   - The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
   - The Rhetoric of Reason By James Crosswhite.
   - Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
   - Writing Arguments: a RHETORIC With Reading by John Ramage.

B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

The Importance of Suspending Judgment

Thus you see how the three arts of grammar, logic, and rhetoric cooperate in regulating the elaborate processes of writing and reading. Skill in the first two stages of analytical reading comes from a mastery of grammar and logic. Skill in the third stage depends on the remaining art. The rules of this stage of reading rest on the principles of rhetoric, conceived in the broadest sense. We will consider them as a code of etiquette to make the reader not only polite, but also effective, in talking back. (Although it is not generally recognized, etiquette always serves these two purposes, not just the former.)

You probably also see what the ninth rule of reading is going to be. It has been intimated several times already. Do not begin to talk back until you have listened carefully and are sure you understand. Not until you are honestly satisfied that you have accomplished the first two stages of reading should you feel free to express yourself. When you have, you not only have earned the right to turn critic, you also have the duty to do so.

This means, in effect, that the third stage of analytical reading must always follow the other two in time. The first two stages interpenetrate each other. Even the beginning reader can combine them somewhat, and the expert combines them almost completely. He can discover the contents of a book by breaking down the whole into its parts and at the same time constructing the whole out of its elements of thought and knowledge, its terms, propositions, and arguments. Furthermore, even for the beginner, a certain amount of the work required at those two stages can be performed during a good inspectional reading. But the expert no less than the beginner must wait until he understands before he starts to criticize.

> **Let us restate this ninth rule of reading in the following form: RULE 44. YOU MUST BE ABLE TO SAY, WITH REASONABLE CERTAINTY, "I UNDERSTAND," BEFORE YOU CAN SAY ANY ONE OF THE FOLLOWING THINGS: "I AGREE," OR "I DISAGREE," OR "I SUSPEND JUDGMENT." These three remarks exhaust all the critical positions you can take. We hope you have not made the error of supposing that to criticise is always to disagree. That is a popular misconception. To agree is just as much an exercise of critical judgment on your part as to disagree. You can be just as wrong in agreeing as in disagreeing. To agree without understanding is inane. To disagree without understanding is impudent.**

Though it may not be so obvious at first, suspending judgment is also an act of criticism. It is taking the position that something has not been shown. You are saying that you are not convinced or persuaded one way or the other.

The rule seems to be such obvious common sense that you may wonder why we have bothered to state it so explicitly. There are two reasons. In the first place, many people make the error already mentioned of identifying criticism with disagreement. (Even "constructive" criticism is disagreement.) In the second place, though this rule seems obviously sound, our experience has been that few people observe it in practice. Like the golden rule, it elicits more lip service than intelligent obedience.

Every author has had the experience of suffering book reviews by critics who did not feel obliged to do the work of the first two stages first. The critic too often thinks he does not have to be a reader as well as a judge. Every lecturer has also had the experience of having critical questions asked that were not based on any understanding of what he had said. You yourself may remember an occasion where someone said to a speaker, in one breath or at most two, "I don't know what you mean, but I think you're wrong."

There is actually no point in answering critics of this sort. The only polite thing to do is to ask them to state your position for you, the position they claim to be challenging. If they cannot do it satisfactorily, if they cannot repeat what you have said *in their own words,* you know that they do not understand, and you are entirely justified in ignoring their criticisms. They are irrelevant, as all criticism must be that is not based on understanding. When you find the rare person who shows that he understands what you are saying as well as you do, then you can delight in his agreement or be seriously disturbed by his dissent.

In years of reading books with students of one kind and another, we have found this rule more honoured in the breach than in the observance. Students who plainly do not know what the author is saying seem to have no hesitation in setting themselves up as his judges. They not only disagree with something they do not understand but, what is equally bad, they also often agree to a position they cannot express intelligibly in their own words. Their discussion, like their reading, is all words. Where understanding is not present, affirmations and denials are equally meaningless and unintelligible. Nor is a position of doubt or detachment any more intelligent in a reader who does not know what he is suspending judgment about.

There are several further points to note concerning the observance of this rule. If you are reading a good book, you ought to hesitate before you say, "I understand." The presumption certainly is that you have a lot of work to do before you can make that declaration honestly and with assurance. You must, of course, be a judge of yourself in this matter, and that makes the responsibility even more severe.

To say "I don't understand" is, of course, also a critical judgment, but *only after you have tried your hardest does it reflect on the book rather than yourself.* If you have done everything that can be expected of you and still do not understand, it may be because the book is unintelligible. The presumption, however, is in favor of the book, especially if it is a good one. In reading good books, failure to understand

is usually the reader's fault. Hence he is obligated to stay with the task imposed by the first two stages of analytical reading a long time before entering on the third. When you say "I don't understand," watch your tone of voice. Be sure it concedes the possibility that it may not be the author's fault.

There are two other conditions under which the rule requires special care. If you are reading only part of a book, it is more difficult to be sure that you understand, and hence you should be more hesitant to criticise. And sometimes a book is related to other books by the same author, and depends upon them for its full significance. In this situation, also, you should be more circumspect about saying "I understand," and slower to raise your critical lance.

A good example of brashness in this last respect is furnished by literary critics who have agreed or disagreed with Aristotle's *Poetics* without realising that the main principles in Aristotle's analysis of poetry depend in part on points made in other of his works, his treatises on psychology and logic and metaphysics. They have agreed or disagreed without understanding what it is all about.

The same is true of other writers, such as Plato and Kant, Adam Smith and Karl Marx, who have not been able to say everything they knew or thought in a single work. Those who judge Kant's *Critique of Pure Reason* without reading his *Critique of Practical Reason,* or Adam Smith's *Wealth of Nations* without reading his *Theory of the Moral Sentiments,* or *The Communist Manifesto* without Marx's *Capital,* are more likely than not to be agreeing or disagreeing with something they do not fully understand.

The first thing a reader can say is that he understands or that he does not. In fact, he must say he understands, in order to say more. ***If he does not understand The Book, Article, Discussion, Debate or any other resource he should keep his peace and go back to work on the book, Article, Discussion, Debate or any other resource.***

The Importance of Avoiding Contentiousness

The second general maxim of critical reading is as obvious as the first, but it needs explicit statement, nevertheless, and for the same reason. It is RULE 45, and it can be expressed thus: WHEN YOU DISAGREE, DO SO REASONABLY, AND NOT DISPUTATIOUSLY OR CONTENTIOUSLY. There is no point in winning an argument if you know or suspect you are wrong. Practically, of course, it may get you ahead in the world for a short time. But honesty is the better policy in the slightly longer run.

We learned this maxim first from Plato and Aristotle. In a passage in the *Symposium,* this interchange occurs:

> I cannot refute you, Socrates, said Agathon: Let us assume that what you say is true.
>
> Say rather, Agathon, that you cannot refute the truth; for Socrates is easily refuted.

The passage is echoed in a remark of Aristotle's in the *Ethics.* "It would be thought to be better," he says, indeed to be our duty, for the sake of maintaining the truth even to destroy what touches us closely, especially as we are philosophers or lovers of wisdom; for, while both are dear, piety requires us to honor truth above our friends.
Plato and Aristotle here give us advice that most people ignore. Most people think that winning the argument is what matters, not learning the truth.

He who regards conversation as a battle can win only by being an antagonist, only by disagreeing successfully, whether he is right or wrong. The reader who approaches a book in this spirit reads it only to find something he can disagree with. For the disputatious and the contentious, a bone can always be found to pick a quarrel over. It makes no difference whether the bone is really a chip on your own shoulder.

In a conversation that a reader has with a book in the privacy of his own study, there is nothing to prevent the reader from seeming to win the argument. He can dominate the situation. The author is not there to defend himself. If all he wants is the empty satisfaction of seeming to show the author up, the reader can get it readily. He scarcely has to read the book through to get it. Glancing at the first few pages will suffice.

But if he realizes that the only profit in conversation, with living or dead teachers, is what one can learn from them, if he realizes that you win only by gaining knowledge, not by knocking the other fellow down, he may see the futility of mere contentiousness. We are not saying that a reader should not ultimately disagree and try to show where the author is wrong. We are saying only that *he should be as prepared to agree as to disagree.* Whichever he does should be motivated by one consideration alone—the facts, the truth about the case.More than honesty is required here. It goes without saying that a reader should admit a point when he sees it. But he also should not feel *whipped* by having to agree with an author, instead of dissenting. If he feels that way, he is inveterately

disputatious. In the light of this second maxim, his problem is seen to be emotional rather than intellectual.

On the Resolution of Disagreements

The third maxim is closely related to the second. It states another condition prior to the undertaking of criticism. It recommends that you regard disagreements as capable of being resolved. Where the second maxim urged you not to disagree *disputatiously,* this one warns you against disagreeing *hopelessly.* One is hopeless about the fruitfulness of discussion if he does not recognize that all rational men can agree. Note that we said "can agree." We did not say all rational men *do* agree. Even when they do not agree, they can. The point we are trying to make is that disagreement is futile agitation unless it is undertaken with the hope that it may lead to the resolution of an issue.

These two facts, that people do disagree and can agree, arise from the complexity of human nature. Men are rational animals. Their rationality is the source of their power to agree. Their animality, and the imperfections of their reason that it entails, is the cause of most of the disagreements that occur. Men are creatures of passion and prejudice. The language they must use to communicate is an imperfect medium, clouded by emotion and colored by interest, as well as inadequately transparent for thought. Yet to the extent that men are rational, these obstacles to their understanding can be overcome. The sort of disagreement that is only apparent, the sort that results from misunderstanding, is certainly curable.

There is, of course, another sort of disagreement, which is owing merely to inequalities of knowledge. The relatively ignorant often wrongly disagree with the relatively learned about matters exceeding their knowledge. The more learned, however, have a right to be critical of errors made by those who lack relevant knowledge. Disagreement of this sort can also be corrected. Inequality of knowledge is always curable by instruction.

There may still be other disagreements that are more deeply buried, and that may subsist in the body of reason itself. It is hard to be sure about these, and almost impossible for reason to describe them. In any event, what we have just said applies to the great majority of disagreements. They can be resolved by the removal of misunderstanding or of ignorance. Both cures are usually possible, though often difficult. Hence the person who, at any stage of a conversation, disagrees, should at least hope to reach agreement in the end. He should be as much prepared to have his own mind changed as seek to change the mind of another. He should always keep before him the possibility that he misunderstands or that he is ignorant on some point. No one who looks upon disagreement as an occasion for teaching another should forget that it is also an occasion for being taught.

The trouble is that many people regard disagreement as unrelated to either teaching or being taught. They think that everything is just a matter of opinion. I have mine, and you have yours; and our right to our opinions is as inviolable as our right to private property. On such a view, communication cannot be profitable if the profit to be gained is an increase in knowledge. Conversation is hardly better than a ping-pong game of opposed opinions, a game in which no one keeps score, no one wins, and everyone is satisfied because he does not lose—that is, he ends up holding the same opinions he started with.

We would not—and could not—write this book if we held this view. Instead, we hold that knowledge can be communicated and that discussion can result in learning. If genuine knowledge, not mere personal opinion, is at stake, then, for the most part, either disagreements are apparent only—to be removed by coming to terms and a meeting of minds; or they are real, and the genuine issues can be resolved—in the long run, of course—by appeals to fact and reason. The maxim of rationality concerning disagreements is to be patient for the long run. We are saying, in short, that disagreements are arguable matters. And argument is empty unless it is undertaken on the supposition that there is attainable an understanding that, when attained by reason in the light of all the relevant evidence, resolves the original issues.

How does this third maxim apply to the conversation between reader and writer? How can it be stated as a rule of reading? It deals with the situation in which the reader finds himself disagreeing with something in the book. It requires him first to be sure that the disagreement is not owing to misunderstanding. Suppose that the reader has been careful to observe the rule that he must not render a critical judgment until he understands, and is therefore satisfied that there is no misunderstanding here. What then?

This maxim then requires him to distinguish between genuine knowledge and mere opinion, and to regard an issue where knowledge is concerned as one that can be resolved. If he pursues the matter further, he may be instructed by the author on points that will change his mind. If that does not happen, he may be justified in his criticism, and, metaphorically at least, be able to instruct the author. He can at least hope that were the author alive and present, his mind could be changed.

You may remember something that was said on this subject in the last chapter. If an author does not give reasons for his propositions, they can be treated only as expressions of personal opinions on his part. The reader who does not distinguish between the reasoned statement of knowledge and the flat expression of opinion is not reading to learn. He is at most interested in the author's personality and is using the book as a case history. Such a reader will, of course, neither agree nor disagree. He does not judge the book but the man.

If, however, the reader is primarily interested in the book and not the man, he should take his critical obligations seriously. These involve applying the distinction between real knowledge and mere opinion to himself as well as to the author. Thus the reader must do

more than make judgments of agreement or disagreement. He must give reasons for them. In the former case, of course, it suffices if he actively shares the author's reasons for the point on which they agree. But when he disagrees, he must give his own grounds for doing so. Otherwise, he is treating a matter of knowledge as if it were opinion.

RULE 46, therefore, can be stated as follows: RESPECT THE DIFFERENCE BETWEEN KNOWLEDGE AND MERE PERSONAL OPINION BY GIVING REASONS FOR ANY CRITICAL JUDGMENT YOU MAKE.

Incidentally, we would not want to be understood as claiming that there is a great deal of "absolute" knowledge available to men. Self-evident propositions, in the sense in which we defined them in the previous chapter, seem to us to be both indemonstrable and undeniable truths. Most knowledge, however, lacks that degree of absoluteness. What we know, we know subject to correction; we know it because all, or at least the weight, of the evidence supports it, but we are not and cannot be certain that new evidence will not sometime invalidate what we now believe is true.

This, however, does not remove the important distinction between knowledge and opinion that we have been stressing. Knowledge, if you please, consists in those *opinions that can be defended,* opinions for which there is evidence of one kind or another. If we really know something, in this sense, we must believe that we can convince others of what we know. Opinion, in the sense in which we have been employing the word, is unsupported judgment. That is why we have employed the modifiers "mere" or "personal" in conjunction with it. We can do no more than opine that something is true when we have no evidence or reason for the statement other than our personal feeling or prejudice. We can say that it is true and that we know it when we have objective evidence that other reasonable men are likely to accept.

Let us now summarize the three general maxims we have discussed in this chapter. The three together state the conditions of a critical reading and the manner in which the reader should proceed to "talk back" to the author.

The first requires the reader to complete the task of understanding before rushing in. The second adjures him not to be disputatious or contentious. The third asks him to view disagreement about matters of knowledge as being generally remediable. This rule goes further: It also commands him to give reasons for his disagreements so that issues are not merely stated but also defined. In that lies all hope for resolution.

The first thing a reader can say is that he understands or that he does not. In fact, he must say he understands, in order to say more. If he does not understand, he should keep his peace and go back to work on the book.

There is one exception to the harshness of the second alternative. "I don't understand" may itself be a critical remark. To make it so, the reader must be able to support it. If the fault is with the book rather than himself, the reader must locate the sources of trouble. He should be able to show that the structure of the book is disorderly, that its parts do not hang together, that some of it lacks relevance, or, perhaps, that the author equivocates in the use of important words, with a whole train of consequent confusions. To the extent that a reader can support his charge that the book is unintelligible, he has no further critical obligations.

Let us suppose, however, that you are reading a good book. That means it is a relatively intelligible one. And let us suppose that you are finally able to say "I understand." If, in addition to understanding the book, you agree thoroughly with what the author says, the work is over. The analytical reading is completely done. You have been enlightened, and convinced or persuaded. It is clear that we have additional steps to consider only in the case of disagreement or suspended judgment. The former is the more usual case.

To the extent that authors argue with their readers—and expect their readers to argue back—the good reader must be acquainted with the principles of argument. He must be able to carry on civil, as well as intelligent, controversy. That is why there is need for a chapter of this sort in a book on reading. *Not simply by following an author's arguments, but only by meeting them as well, can the reader ultimately reach significant agreement or disagreement with his author.*

The meaning of agreement and disagreement deserves a moment's further consideration. The reader who comes to terms with an author and grasps his propositions and reasoning shares the author's mind. In fact, the whole process of interpretation is directed toward a meeting of minds through the medium of language. Understanding a book can be described as a kind of agreement between writer and reader. They agree about the use of language to express ideas. Because of that agreement, the reader is able to see through the author's language to the ideas he is trying to express.

If the reader understands a book, how can he disagree with it? Critical reading demands that he make up his own mind. But his mind and the author's have become as one through his success in understanding the book. What mind has he left to make up independently? There are some people who make the error that causes this apparent difficulty: they fail to distinguish between two senses of "agreement." In consequence, they wrongly suppose that where there is

understanding between men, disagreement is impossible. They say that all disagreement is simply owing to misunderstanding.

The error in this becomes obvious as soon as we remember that the author is making judgments about the world in which we live. He claims to be giving us theoretical knowledge about the way things exist and behave, or practical knowledge about what should be done. Obviously, he can be either right or wrong. His claim is justified only to the extent that he speaks truly, to the extent that he says what is probable in the light of evidence. Otherwise, his claim is unfounded.

If you say, for instance, that "all men are equal," we may take you to mean that all men are equally endowed at birth with intelligence, strength, and other abilities. In the light of the facts as we know them, we disagree with you. We think you are wrong. But suppose we have misunderstood you. Suppose you meant by these words that *all men should have equal political rights.* Because we misapprehended your meaning, our disagreement was irrelevant. Now suppose the mistake corrected. Two alternatives still remain. We can agree or disagree, *but now if we disagree, there is a real issue between us.* We understand your political position, but hold a contrary one.

Issues about matters of fact or policy—issues about the way things are or should be—are real in this sense only when they are based on a common understanding of what is being said. Agreement about the use of words is the indispensable condition for genuine agreement or disagreement about the facts being discussed. It is because of, not in spite of, your meeting the author's mind through a sound interpretation of his book that you are able to make up your own mind as concurring in or dissenting from the position he has taken.

Prejudice and Judgment

Now let us consider the situation in which, having said you understand, you proceed to disagree. If you have tried to abide by the maxims stated in the previous chapter, you disagree because you think the author can be shown to be wrong on some point. You are not simply voicing your prejudice or expressing your emotions. Because this is true, then, from an ideal point of view, there are three conditions that must be satisfied if controversy is to be well conducted.

***The first is this.* Since men are animals as well as rational, it is necessary to acknowledge the emotions you bring to a dispute, or those that arise in the course of it. Otherwise you are likely to be giving vent to feelings, not stating reasons. You may even think you have reasons, when all you have are strong feelings.**

Second,* you must make your own assumptions explicit. You must know what your prejudices—that is, your prejudgments—are. Otherwise you are not likely to admit that your opponent may be equally entitled to different assumptions. *Good

controversy should not be a quarrel about assumptions. **If an author, for example, explicitly asks you to take something for granted, the fact that the opposite can also be taken for granted should not prevent you from honoring his request. If your prejudices lie on the opposite side, and if you do not acknowledge them to be prejudices, you cannot give the author's case a fair hearing.**

Third and finally, **an attempt at impartiality is a good antidote for the blindness that is almost inevitable in partisanship. Controversy without partisanship is, of course, impossible. But to be sure that there is more light in it, and less heat, each of the disputants should at least try to take the other fellow's point of view. If you have not been able to read a book *sympathetically,* your disagreement with it is probably more contentious than civil.**

These three conditions are, ideally, the *sine qua non* of intelligent and profitable conversation. They are obviously applicable to reading, insofar as that is a kind of conversation between reader and author. Each of them contains sound advice for readers who are willing to respect the civilities of disagreement.

But the ideal here, as elsewhere, can only be approximated. The ideal should never be expected from human beings. We ourselves, we hasten to admit, are sufficiently conscious of our own defects. We have violated our own rules about good intellectual manners in controversy. We have caught ourselves attacking a book rather than criticizing it, knocking straw men over, denouncing where we could not support denials, proclaiming our prejudices as if ours were any better than the author's.

We continue to believe, however, that conversation and critical reading *can* be well disciplined. We are therefore going to substitute for those three ideal conditions, a set of prescriptions that may be easier to follow. They indicate the four ways in which a book can be adversely criticized. Our hope is that if a reader confines himself to making these points, he will be less likely to indulge in expressions of emotion or prejudice.

The four points can be briefly summarized by conceiving the reader as conversing with the author, as talking back. After he has said, "I understand but I disagree," he can make the following remarks to the author: (1) *"You are uninformed";* (2) *"You are misinformed";* (3) *"You are illogical—your reasoning is not cogent";* (4) *"Your analysis is incomplete."*

These may not be exhaustive, though we think they are. In any event, they are certainly the principal points a reader who disagrees can make. They are somewhat independent. Making one of these remarks does not prevent you from making another. Each and all can be made, because the defects they refer to are not mutually exclusive. But, we should add, the reader cannot make any of these remarks without being definite and precise about the respect in which the author is uninformed or misinformed or illogical. A book cannot be uninformed or

misinformed about everything. It cannot be totally illogical. Furthermore, the reader who makes any of these remarks must not only make it definitely, by specifying the respect, but he must also support his point. He must give reasons for saying what he does.

Judging the Author's Soundness

The first three remarks are somewhat different from the fourth, as we will presently see. Let us consider each of them briefly, and then turn to the fourth.

1. **To say that an author is *uninformed* is to say that he lacks some piece of knowledge that is relevant to the problem he is trying to solve. Notice here that unless the knowledge, if possessed by the author, would have been relevant, there is no point in making this remark. To support the remark, you must be able yourself to state the knowledge that the author lacks and show how it is relevant, how it makes a difference to his conclusions. A few illustrations here must suffice. Darwin lacked the knowledge of genetics that the work of Mendel and later experimentalists now provides. His ignorance of the mechanism of inheritance is one of the major defects in *The Origin of Species.* Gibbon lacked certain facts that later historical research has shown to have a bearing on the fall of Rome. Usually, in science and history, the lack of information is discovered by later researches. Improved techniques of observation and prolonged investigation make this the way things happen for the most part. But in philosophy, it may happen otherwise. There is just as likely to be loss as gain with the passage of time. The ancients, for example, clearly distinguished between what men can sense and imagine and what they can understand. Yet, in the eighteenth century, David Hume revealed his ignorance of this distinction between images and ideas, even though it had been so well established by the work of earlier philosophers.**

2. **To say that an author is *misinformed* is to say that he asserts what is not the case. His error here may be owing to lack of knowledge, but the error is more than that. Whatever its cause, it consists in making assertions contrary to fact. The author is proposing as true or more probable what is in fact false or less probable. He is claiming to have knowledge he does not possess. This kind of defect should be pointed out, of course, only if it is relevant to the author's conclusions. And to support the remark you must be able to argue the truth or greater probability of a position contrary to the author's. For example, in one of his political treatises, Spinoza appears to say that democracy is a more primitive type of government than monarchy. This is contrary to well-ascertained facts of political history. Spinoza's error in this respect has a bearing on his argument. Aristotle was misinformed about the role that the female factor plays in animal reproduction, and consequently came to unsupportable conclusions about the processes of procreation.**

Aquinas erroneously supposed that the matter of the heavenly bodies is essentially different from that of terrestrial bodies, because he supposed that the former change only in position, and are otherwise unalterable. Modern astrophysics corrects this error and thereby improves on ancient and medieval astronomy. But here is an error that has limited relevance. Making it does not affect Aquinas' metaphysical account of the nature of all sensible things as composed of matter and form. These first two points of criticism may be related. Lack of information, as we have seen, may be the cause of erroneous assertions. Further, whenever a man is *misinformed* in a certain respect, he is also *uninformed* in the same respect. But it makes a difference whether the defect is simply negative or positive as well. Lack of relevant knowledge makes it impossible to solve certain problems or support certain conclusions. Erroneous suppositions, however, lead to wrong conclusions and untenable solutions. Taken together, these two points charge an author with defects in his premises. He needs more knowledge than he possesses. His evidences and reasons are not good enough in quantity or quality.

3. **To say that an author is *illogical* is to say that he has committed a fallacy in reasoning. In general, fallacies are of two sorts. There is the *non sequitur,* which means that what is drawn as a conclusion simply does not follow from the reasons offered. And there is the occurrence of inconsistency, which means that two things the author has tried to say are incompatible. To make either of these criticisms, the reader must be able to show the precise respect in which the author's argument lacks cogency. One is concerned with this defect only to the extent that the major conclusions are affected by it. A book may safely lack cogency in irrelevant respects. It is more difficult to illustrate this third point, because few really good books make obvious slips in reasoning. When they do occur, they are usually elaborately concealed, and it requires a very penetrating reader to discover them. But we can show you a patent fallacy in Machiavelli's *The Prince.* Machiavelli writes: The chief foundations of all states, new as well as old, are good laws. As there cannot be good laws where the state is not well armed, it follows that where they are well armed they have good laws.**

   Now it simply does not follow from the fact that good laws depend on an adequate police force, that where the police force is adequate, the laws will necessarily be good. We are ignoring the highly questionable character of the first contention. We are only interested in the *non sequitur* here. It is truer to say that happiness depends on health than that good laws depend on an effective police force, but it does not follow that all who are healthy are happy.

   In his *Elements of Law,* Hobbes argues in one place that all bodies are nothing but quantities of matter in motion. The world of bodies, he says, has no qualities whatsoever. Then, in another place, he argues that man is himself nothing but a body, or a collection of atomic bodies in motion. Yet, admitting the existence of sensory qualities—colors, odors, tastes, and so forth—he concludes that they are nothing but the motions of atoms in the brain. The conclusion is inconsistent with the position first taken, namely, that the world

of bodies in motion is without qualities. What is said of all bodies in motion must apply to any particular group of them, including the atoms of the brain. This third point of criticism is related to the other two. An author may, of course, fail to draw the conclusions that his evidences or principles imply. Thus his reasoning is incomplete. But we are here concerned primarily with the case in which *he reasons poorly from good grounds.* It is interesting, but less important, to discover lack of cogency in reasoning from premises that are themselves untrue, or from evidences that are inadequate. A person who from sound premises reaches a conclusion invalidly is, in a sense, misinformed. But it is worthwhile to distinguish the kind of erroneous statement that is owing to bad reasoning from the kind previously discussed, which is owing to other defects, especially insufficient knowledge of relevant details. Good Evidence, does not become Bad evidence, because of the Lapse of Time. Double Standards is the sign of failed argument. Inconsistency is the sign of failed Argument

Judging the Author's Completeness

The first three points of criticism, which we have just considered, deal with the soundness of the author's statements and reasoning. Let us turn now to the fourth adverse remark a reader can make. It deals with the completeness of the author's execution of his plan—the adequacy with which he discharges the task he has chosen.

Before we proceed to this fourth remark, one thing should be observed. Since you have said you understand, your failure to support any of these first three remarks obligates you to agree with the author as far as he has gone. You have no freedom of will about this. It is not your sacred privilege to decide whether you are going to agree or disagree.

If you have not been able to show that the author is uninformed, misinformed, or illogical on relevant matters, you simply cannot disagree. You must agree. You cannot say, as so many students and others do, "I find nothing wrong with your premises, and no errors in reasoning, but I don't agree with your conclusions." All you can possibly mean by saying something like that is that you do not *like* the conclusions. You are not disagreeing. You are expressing your emotions or prejudices. If you have been convinced, you should admit it. (If, despite your failure to support one or more of these three critical points, you still honestly feel unconvinced, perhaps you should not have said you understood in the first place.)

The first three remarks are related to the author's terms, propositions, and arguments. These are the elements he used to solve the problems that initiated his efforts. The fourth remark—that the book is incomplete—bears on the structure of the whole.

4. To say that an author's *analysis is incomplete* is to say that he has not solved all the problems he started with, or that he has not made as good a use of his materials as possible, that he did not see all their implications and ramifications, or that he has failed to make distinctions that are relevant to his undertaking. It is not enough to say that a book is incomplete. Anyone can say that of any book. Men are finite, and so are their works, every last one. There is no point in making this remark, therefore, unless the reader can define the inadequacy precisely, either by his own efforts as a knower or through the help of other books.

Let us illustrate this point briefly. The analysis of types of government in Aristotle's *Politics* is incomplete. Because of the limitations of his time and his erroneous acceptance of slavery, Aristotle fails to consider, or for that matter even to conceive, the truly democratic constitution that is based on universal suffrage; nor can he imagine either representative government or the modern kind of federated state. His analysis would have to be extended to apply to these political realities. Euclid's *Elements of Geometry* is an incomplete account because Euclid failed to consider other postulates about the relation of parallel lines. Modern geometrical works, making these other assumptions, supply the deficiencies. Dewey's *How We Think* is an incomplete analysis of thinking because it fails to treat the sort of thinking that occurs in reading or learning by instruction in addition to the sort that occurs in investigation and discovery. To a Christian who believes in personal immortality, the writings of Epictetus or Marcus Aurelius are an incomplete account of human happiness.

This fourth point is strictly not a basis for disagreement. It is critically adverse only to the extent that it marks the limitations of the author's achievement. A reader who agrees with a book in part—because he finds no reason to make any of the other points of adverse criticism—may, nevertheless, suspend judgment on the whole, in the light of this fourth point about the book's incompleteness. Suspended judgment on the reader's part responds to an author's failure to solve his problems perfectly.

Related books in the same field can be critically compared by reference to these four criteria. One is better than another in proportion as it speaks more truth and makes fewer errors. If we are reading for knowledge, that book is best, obviously, which most adequately treats a given subject matter. One author may lack information that another possesses; one may make erroneous suppositions from which another is free; one may be less cogent than another in reasoning from similar grounds. But the profoundest

comparison is made with respect to the completeness of the analysis that each presents. The measure of such completeness is to be found in the number of valid and significant distinctions that the accounts being compared contain. You may see now how useful it is to have a grasp of the author's terms. The number of distinct terms is correlative with the number of distinctions.

You may also see how the fourth critical remark ties together the three stages of analytical reading of any book. The last step of structural outlining is to know the problems that the author is trying to solve. The last step of interpretation is to know which of these problems the author solved and which he did not. The final step of criticism is the point about completeness. It touches structural outlining insofar as it considers how adequately the author has stated his problems, and interpretation insofar as it measures how satisfactorily he has solved them.

The Third Stage of Analytical Reading

We have now completed, in a general way, the enumeration and discussion of the rules of analytical reading. We can now set forth all the rules in their proper order and under appropriate headings.

I. THE FIRST STAGE OF ANALYTICAL READING: RULES FOR FINDING WHAT A BOOK IS ABOUT

1. **Classify the book according to kind and subject matter.**
2. **State what the whole book is about with the utmost brevity.**
3. **Enumerate its major parts in their order and relation, and outline these parts as you have outlined the whole.**
4. **Define the problem or problems the author has tried to solve.**

II. THE SECOND STAGE OF ANALYTICAL READING: RULES FOR INTERPRETING A BOOK'S CONTENTS

5. **Come to terms with the author by interpreting his key words.**
6. **Grasp the author's leading propositions by dealing with his most important sentences.**
7. **Know the author's arguments, by finding them in, or constructing them out of, sequences of sentences.**
8. **Determine which of his problems the author has solved, and which he has not; and of the latter, decide which the author knew he had failed to solve.**

III. THE THIRD STAGE OF ANALYTICAL READING: RULES FOR CRITICIZING A BOOK AS A COMMUNICATION OF KNOWLEDGE

A. *General Maxims of Intellectual Etiquette*

9. Do not begin criticism until you have completed your outline and your interpretation of the book. (Do not say you agree, disagree, or suspend judgment, until you can say "I understand.")

10. Do not disagree disputatiously or contentiously.

11. Demonstrate that you recognise the difference between knowledge and mere personal opinion by presenting good reasons for any critical judgment you make.

B. *Special Criteria for Points of Criticism*

12.Show where the author is uninformed.

13.Show where the author is misinformed.

14.Show where the author is illogical.

15.Show where the author's analysis or account is incomplete.

> Note: Of these last four, the first three are criteria for disagreement. Failing in all of these, you must agree, at least in part, although you may suspend judgment on the whole, in the light of the last point.

We observed at the end of Chapter 7 that applying the first four rules of analytical reading helps you to answer the first basic question you must ask about a book, namely, *What is the book about as a whole?* Similarly, at the end of Chapter 9, we pointed out that applying the four rules for interpretation helps you to answer the second question you must ask, namely, *What is being said in detail, and how?* It is probably clear that the last seven rules of reading—the maxims of intellectual etiquette and the criteria for points of criticism—help you to answer the third and fourth basic questions you must ask. You will recall that those questions are: *Is it true?* and *What of it?*

The question, Is it true? can be asked of anything we read. It is applicable to every kind of writing, in one or another sense of "truth"—mathematical, scientific, philosophical, historical, and poetical. No higher commendation can be given any work of the human mind than to praise it for the measure of truth it has achieved; by the same token, to criticize it adversely for its failure in this respect is to treat it with the seriousness that a serious work deserves. Yet, strangely enough, in recent years, for the first time in Western history, there is a dwindling concern with this criterion of excellence. Books win the plaudits of the critics and gain widespread popular attention almost to the extent that they flout the truth—the more outrageously they do so, the better. Many readers, and most particularly those who review current publications, employ other standards for judging, and praising or condemning, the books they read—their novelty, their sensationalism, their seductiveness, their force, and even their power to bemuse or befuddle the mind, but not their truth, their clarity, or their power to enlighten. They have, perhaps, been brought to this pass by the fact that so much of current writing outside the sphere of the exact sciences manifests so little concern with truth. One might hazard the guess that if saying something that is true, in any sense of that term, were ever again to become the primary concern it should be, fewer books would be written, published, and read.

Unless what you have read is true in some sense, you need go no further. But if it is, you must face the last question. You cannot read for information intelligently without determining what significance is, or should be, attached to the facts presented. Facts seldom come to us without some interpretation, explicit or implied. This is especially true if you are reading digests of information that necessarily select the facts according to some

evaluation of their significance, some principle of interpretation. And if you are reading for enlightenment, there is really no end to the inquiry that, at every stage of learning, is renewed by the question, What of it?

These four questions, as we have already pointed out, summarize all the obligations of a reader. The first three, moreover, correspond to something in the very nature of human discourse. If communications were not complex, structural outlining would be unnecessary. If language were a perfect medium instead of a relatively opaque one, there would be no need for interpretation. If error and ignorance did not circumscribe truth and knowledge, we should not have to be critical. The fourth question turns on the distinction between information and understanding. When the material you have read is itself primarily informational, you are challenged to go further and seek enlightenment. Even when you have been somewhat enlightened by what you have read, you are called upon to continue the search for significance.

Before proceeding to Part Three, perhaps we should stress, once again, that these rules of analytical reading describe an ideal performance. Few people have ever read any book in this ideal manner, and those who have, probably read very few books this way. The ideal remains, however, the measure of achievement. You are a good reader to the degree in which you approximate it.

When we speak of someone as “well-read,” we should have this ideal in mind. Too often, we use that phrase to mean the quantity rather than the quality of reading. A person who has read widely but not well deserves to be pitied rather than praised. As Thomas Hobbes said, “If I read as many books as most men do, I would be as dull-witted as they are.”

The great writers have always been great readers, but that does not mean that they read all the books that, in their day, were listed as the indispensable ones. In many cases, they read fewer books than are now required in most of our colleges, but what they did read, they read well. Because they had mastered these books, they became peers with their authors. They were entitled to become authorities in their own right. In the natural course of events, a good student frequently becomes a teacher, and so, too, a good reader becomes an author.

Our intention here is not to lead you from reading to writing. It is rather to remind you that one approaches the ideal of good reading by applying the rules we have described in the reading of a single book, and not by trying to become superficially acquainted with a larger number. There are, of course, many books worth reading well. There is a much larger number that should be only inspected. To become well-read, in every sense of the word, one must know how to use whatever skill one possesses with discrimination—by reading every book according to its merits.

Method 23-Syntopicon

The Ultimate Goals of Reading

The Fourth Level of Reading: Syntopical Reading

So far we have not said anything specific about how to read two or more books on the same subject. We have tried to suggest that when certain subjects are discussed, more than one book is relevant, and we have also from time to time mentioned, in a very informal way, certain related books and authors in various fields. Knowing that more than one book is relevant to a particular question is the first requirement in any project of syntopical reading. Knowing which books should be read, in a general way, is the second requirement. The second requirement is a great deal harder to satisfy than the first.

The difficulty becomes evident as soon as we examine the phrase "two or more books on the same subject." What do we mean by "same subject"? Perhaps this is clear enough when the subject is a single historical period or event, but in hardly any other sphere is there much clarity to be found. *Gone with the Wind* and *War and Peace* are both novels about a great war—but there, for the most part, the resemblance stops. Stendhal's *The Charterhouse of Parma* is "about" the same conflict—that is, the Napoleonic Wars—that Tolstoy's novel is "about." But of course neither is about the war, or indeed about war in general, as such. War provides the context or background of both stories—as it does for much of human life—but it is the stories on which the authors rivet our attention. We may learn something about the war—in fact, Tolstoy once said that he had learned much of what he knew about battles from Stendhal's account of the Battle of Waterloo—but we do not go to these novels or any others if our primary intention is to study war.

You could have anticipated that this situation would obtain in the case of fiction. It is inherent in the fact that the novelist does not communicate in the same way that an expository writer does. But the situation obtains in the case of expository works, as well.

Suppose, for example, that you are interested in reading about the idea of love. Since the literature of love is vast, you would have relatively little difficulty in creating a bibliography of books to read. Suppose that you have done that, by asking advisors, by searching through the card catalogue of a good library, and by examining the bibliography in a good scholarly treatise on the subject. And suppose in addition that you have confined yourself to expository works, despite the undoubted interest of novelists and poets in the subject. (We will explain why it would be advisable to do this later.) You now begin to examine the books in your bibliography. What do you find?

Even a cursory perusal reveals a very great range of reference. There is hardly a single human action that has not been called—in one way or another—an act of love. Nor is the range confined to the human sphere. If you proceed far enough in your reading, you

will find that love has been attributed to almost everything in the universe; that is, everything that exists has been said by someone either to love or to be loved—or both.

Stones are said to love the center of the earth. The upward motion of fire is called a function of its love. The attraction of iron filings to a magnet is described as an effect of love. Tracts have been written on the love life of amoebae, paramecia, snails, and ants, to say nothing of most of the so-called higher animals, who are said to love their masters as well as one another. When we come to human beings, we discover that authors speak and write of their love for men, women, a woman, a man, children, themselves, mankind, money, art, domesticity, principles, a cause, an occupation or profession, adventure, security, ideas, a country life, loving itself, a beefsteak, or wine. In certain learned treatises, the motions of the heavenly bodies are said to be inspired by love; in others, angels and devils are differentiated by the quality of their love. And of course God is said to *be* Love.

Confronted with this enormous range of reference, how are we to state what the subject is that we are investigating? Can we even be sure that there is a single subject? When one person says “I love cheese,” and another says “I love football,” and a third says “I love mankind,” are they all three using the word in any sense that is common? After all, one eats cheese but not football or mankind, one plays football but not cheese or mankind, and whatever “I love mankind” means, that meaning does not seem to be applicable to cheese or football. And yet all three do use the same word. Is there in fact some deep reason for that, some reason that is not immediately apparent on the surface? Difficult as that question is, can we say that we have identified the “same subject” until we have answered it?

Faced with this chaotic situation, you may decide to limit the enquiry to human love—to love between human beings, of the same sex or different sexes, of the same age or different ages, and so forth. That would rule out the three statements we have just discussed. But you would still find, even if you read only a small portion of the available books about the subject, a very great range of reference. You would find, for instance, that love is said by some writers to consist wholly in acquisitive desire, usually sexual desire; that is, love is merely a name for the attraction that almost all animals feel toward members of the opposite sex. But you would also find other authors who maintain that love, properly speaking, contains no acquisitive desire whatever, and consists in pure benevolence. Do acquisitive desire and benevolence have anything in common, considering that acquisitive desire always implies wanting some good *for oneself,* while benevolence implies wanting a good *for someone else*?

At least acquisitive desire and benevolence share a common note of tendency, of desire in some very abstract sense of the term. But your investigation of the literature of the subject would soon uncover writers who conceive of the essence of love as being cognitive rather than appetitive. Love, these writers maintain, is an intellectual act, not an emotional one. In other words, *knowing* that another person is *admirable* always precedes *desiring* him or her, in either of the two senses of desire. Such authors do not deny that desire enters into the picture, but they do deny that desire should be called love.

Let us suppose—in fact, we think it can be done—that you are able to identify some common meaning in these various conceptions of human love. Even then not all of your problems are solved. Consider the ways in which love manifests itself between and among human beings. Is the love that a man and woman have for each other the same when they are courting as when they are married, the same when they are in their twenties as when they are in their seventies? Is the love that a woman has for her husband the same as that she has for her children? Does a mother's love for her children change as they grow up? Is the love of a brother for his sister the same as his love for his father? Does a child's love for its parents change as he or she grows? Is the love that a man has for a woman, either his wife or some other, the same as the friendship he feels for another man, and does it make a difference what relationship he has with the man—such as one with whom he goes bowling, one with whom he works, and one whose intellectual company he enjoys? Does the fact that "love" and "friendship" are different words mean that the emotions they name (if that is in fact what they name) differ? Can two men of different ages be friends? Can they be friends if they are markedly different in some other respect, such as possession of wealth or degree of intelligence? Can women be friends at all? Can brothers and sisters be friends, or brother and brother, or sister and sister? Can you retain a friendship with someone you either borrow money from or lend it to? It not, why not? Can a boy love his teacher? Does it make a difference whether the teacher is male or female? If humanoid robots existed, could human beings love them? If we discovered intelligent beings on Mars or some other planet, could we love them? Can we love someone we have never met, like a movie star or the President? If we feel that we hate someone, is that really an expression of love?

These are just a few of the questions that would be raised by your reading of even a part of the standard expository literature of love. There are many other questions that could be asked. However, we think we have made the point. A curious paradox is involved in any project of syntopical reading. Although this level of reading is defined as the reading of two or more books on the same subject, which implies that the identification of the subject matter occurs before the reading begins, it is in a sense true that the identification of the subject matter must follow the reading, not precede it. In the case of love, you might have to read a dozen or a hundred works before you could decide what you were reading about. And when you had done that, you might have to conclude that half of the works you had read were not on the subject at all.

The Role of Inspection in Syntopical Reading

We have stated more than once that the levels of reading are cumulative, that a higher level includes all of those that precede or lie below it. It is now time to explain what that means in the case of syntopical reading.

You will recall that in explaining the relationship between inspectional reading and analytical reading, we pointed out that the two steps in inspectional reading— first, skimming; and second, superficial reading—anticipated the first two steps in analytical reading. Skimming helps to prepare you for the first step of analytical reading, in the course of which you identify the subject matter of whatever you are reading, state what kind of book it is, and outline its structure. Superficial reading, while it is also helpful in that first step of analytical reading, is primarily a preparation for the second step, when you are called upon to interpret a book's contents by coming to terms with the author, stating his propositions, and following his arguments.

In a somewhat analogous fashion, both inspectional and analytical reading can be considered as anticipations or preparations for syntopical reading. It is here, in fact, that inspectional reading comes into its own as a major tool or instrument for the reader.

Let us suppose once more that you have a bibliography of a hundred or so titles, all of which appear to be on the subject of love. If you read every one of them analytically, you would not only end up with a fairly clear idea of the subject that you were investigating—the "same subject" of the syntopical reading project—but you would also know which, if any, of the books you had read were not on that subject and thus irrelevant to your needs. But to read a hundred books analytically might well take you ten years. If you were able to devote full time to the project, it would still take many months. Some shortcut is obviously necessary, in the face of the paradox we have mentioned concerning syntopical reading.

That shortcut is provided by your skill in inspectional reading. The first thing to do when you have amassed your bibliography is to *inspect all of the books on your list.* You should not read any of them analytically before inspecting *all* of them. Inspectional reading will not acquaint you with all of the intricacies of the subject matter, or with all of the insights that your authors can provide, but it will perform two essential functions. First, it will give you a clear enough idea of your subject so that your subsequent analytical reading of *some* of the books on the list is productive. And second, it will allow you to cut down your bibliography to a more manageable size.

We can hardly think of any advice that would be more useful for students, especially graduate and research students, than this, if they would only heed it. In our experience, a certain number of students at those advanced levels of schooling have some capability of reading actively and analytically. There may not be enough of them, and they may be far from perfect readers, but they at least know how to get at the meat of a book, to make reasonably intelligible statements about it, and to fit it into a plot or plan of their subject matter. But their efforts are enormously wasteful because they do not understand *how to*

read some books faster than others. They spend the same amount of time and effort on every book or article they read. As a result, they do not read those books that deserve a really good reading as well as they deserve, and they waste time on works that deserve less attention.

The skilful inspectional reader does more than classify a book in his mental card catalogue, and achieve a superficial knowledge of its contents. He also discovers, in the very short time it takes him to inspect it, *whether the book says something important about his subject or not.* He may not yet know what that something is precisely—that discovery will probably have to wait for another reading. But he has learned one of two things. Either the book is one to which he must return for light, or it is one that, no matter how enjoyable or informative, contains no enlightenment and therefore does not have to be read again.

There is a reason why this advice is often unheeded. In the case of analytical reading, we said that the skillful reader performs concurrently steps that the beginner must treat as separate. By analogy, it might seem that this kind of preparation for syntopical reading—the inspection of all of the books on your list before starting the analytical reading of any of them—could be done concurrently with analytical reading. But we do not believe that can be done by any reader, no matter how skillful. And this indeed is the mistake that so many younger researchers make. Thinking they can collapse these two steps into one, they end up reading everything at the same rate, which may be either too fast or too slow for a particular work, but in any event is wrong for most of the books they read.

Once you have identified, by inspection, the books that are relevant to your subject matter, you can then proceed to read them syntopically. Note that in the last sentence we did not say “proceed to read them analytically,” as you might have expected. In a sense, of course, you do have to read each of the individual works that, together, constitute the literature of your subject, with those skills that you acquired by applying the rules of analytical reading. But it must never be forgotten that *the art of analytical reading applies to the reading of a single book,* when understanding of that book is the aim in view. As we will see, the aim in syntopical reading is quite different.

The Steps in Syntopical Reading

We are now prepared to explain how to read syntopically. We will assume that, by your inspection of a number of books, you have a pretty good idea of the subject that at least some of them are about, and furthermore that this is the subject you want to investigate. What, then, do you do?

There are five steps in syntopical reading. We shall not call them rules, although we might, for if any of the steps is not taken, syntopical reading becomes much more difficult, perhaps impossible. We will discuss them roughly in the order in which they occur, although in a sense all of them have to take place for any of them to.

Step 1. Create a tentative bibliography of your subject by recourse to library catalogues, advisors, and bibliographies in books.

Step 2. Inspect *all* of the books on the tentative bibliography to ascertain which are germane to your subject, and also to acquire a clearer idea of the subject.Note: These two steps are not, strictly speaking, chronologically distinct; that is, the two steps have an effect on each other, with the second, in particular, serving to modify the first.

STEP 3 IN SYNTOPICAL READING: FINDING THE RELEVANT PASSAGES. Since we are of course assuming that you know how to read analytically, we are assuming that you could read each of the relevant books thoroughly if you wanted to. But that would be to place the individual books first in the order of your priorities, and your problem second. In fact, the order is reversed. *In syntopical reading, it is you and your concerns that are primarily to be served, not the books that you read. First,* the topic in connection with which the passage is being read serves to give direction to the reader in interpreting the passage. But it does not tell him what the passage means, since the passage may be relevant to the topic in several or many different ways. Hence the reader is called upon to *discover precisely what relevance the passage has to the topic.* To learn to do this is to acquire a major skill in the art of reading.

Hence the first step at this level of reading is another inspection of the whole works that you have identified as relevant. Your aim is to find the passages in the books that are most germane to your needs. It is unlikely that the whole of any of the books is directly on the subject you have chosen or that is troubling you. Even if this is so, as it very rarely is, you should read the book quickly. You do not want to lose sight of the fact that you are reading it for an ulterior purpose—namely, for the light it may throw on your own problem—not for its own sake.

It might seem that this step could be taken concurrently with the previously described inspection of the book, the purpose of which was to discover whether the book was at all relevant to your concerns. In many cases, that is so. But it is unwise to consider that this is always possible. Remember that one of the aims of your first inspection of the book was to zero in on the subject matter of your syntopical reading project. We have said that an

adequate understanding of the problem is not always available until you have inspected many of the books on your original list. Therefore, to try to identify the *relevant passages* at the same time that you identify the *relevant books* is often perilous. Unless you are very skillful, or already quite familiar with your subject, you had better treat the two steps as separate.

What is important here is to recognize the difference between the first books that you read in the course of syntopical reading, and those that you come to after you have read many others on the subject. In the case of the later books, you probably already have a fairly clear idea of your problem, and in that case the two steps can coalesce. But at the beginning, they should be kept rigorously separated. Otherwise, you are likely to make serious mistakes in identifying the relevant passages, mistakes that will have to be corrected later with a consequent waste of time and effort.

Above all, remember that your task is not so much to achieve an overall understanding of the particular book before you as to find out how it can be useful to you *in a connection that may be very far from the author's own purpose in writing it.* That does not matter at this stage of the proceedings. The author can help you to solve your own problem without having intended to. In syntopical reading, as we have noted, the books that are read serve you, not the other way around. In this sense, syntopical reading is the most active reading you can do. Analytical reading is also active, of course. But when you read a book analytically, you put yourself in a relation to it of disciple to master. When you read syntopically, *you* must be the master of the situation.

Because this is so, you must go about the business of coming to terms with your authors in a somewhat different way than before.

STEP 4 Use Rules of Reading by Analysing the various text. IN SYNTOPICAL READING: BRINGING THE AUTHORS TO TERMS. In interpretive reading (the second stage of analytical reading) the first rule requires you to come to terms with the author, which means identifying his key words and discovering how he uses them. But now you are faced with a number of different authors, and it is unlikely that they will have all used the same words, or even the same terms. *Thus it is you who must establish the terms, and bring your authors to them rather than the other way around. First* the collection of a number of passages on the same topic, but from different works and different authors, serves to *sharpen the reader's interpretation of each passage read.* Sometimes, when passages from the same book are read in sequence and in the context of one another, each becomes clearer. Sometimes the meaning of each of a series of contrasting or conflicting passages from different books is accentuated when they are read against one another. And sometimes the passages from one author, by amplifying or commenting on the passages from another, materially help the reader's understanding of the second author.*Second* if syntopical reading is done on a number of different subjects, the fact that the same passage will often be found cited in the Syntopicon under two or more subjects will have its instructive effect. The passage has an amplitude of meaning that the reader will come to perceive as he interprets it somewhat differently in relation to different

topics. Such multiple interpretation not only is a basic exercise in the art of reading but also tends to make the mind habitually alert to the many strains of meaning that any rich or complex passage can contain.

This is probably the most difficult step in syntopical reading. What it really comes down to is forcing an author *to use your language, rather than using his.* All of our normal reading habits are opposed to this. As we have pointed out several times, we assume that the author of a book we want to read analytically is our better, and this is particularly true if the book is a great one. Our tendency is to accept the author's terms and his organization of the subject matter, no matter how active we may be in trying to understand him. In syntopical reading, however, we will very quickly be lost if we accept any one author's terminology. We may understand *his* book, but we will fail to understand the others, and we will find that not much light is shed on the subject in which we are interested.

Not only must we resolutely refuse to accept the terminology of *any one* author; we must also be willing to face the possibility that *no* author's terminology will be useful to us. In other words, we must accept the fact that coincidence of terminology between us and any of the authors on our list is merely accidental. Often, indeed, such coincidence will be inconvenient; for if we use one term or set of terms of an author, we may be tempted to use others among his terms, and these may get in the way rather than help.

Syntopical reading, in short, is to a large extent an exercise in translation. We do not have to translate from one natural language to another, as from French to English. But we do impose a common terminology on a number of authors who, whatever natural language they may have shared in common, may not have been specifically concerned with the problem we are trying to solve, and therefore may not have created the ideal terminology for dealing with it.

This means that as we proceed on our project of syntopical reading we must begin to build up a set of terms that first, helps us to understand all of our authors, not just one or a few of them, and second, helps us to solve our problem. That insight leads to the third step.

STEP 5 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: GETTING THE QUESTIONS CLEAR. The second rule of interpretive reading requires us to find the author's key sentences, and from them to develop an understanding of his propositions. Propositions are made up of terms, and of course we must do a similar job on the works we are reading syntopically. But since we ourselves are establishing the terminology in this case, *we are faced with the task of establishing a set of neutral propositions as well.* The best way to do this is to frame a set of questions that shed light on our problem, and to which each of our authors gives answers.

This, too, is difficult. The questions must be stated in such a way and in such an order that they help us to solve the problem we started with, but they also must be framed in such a way that all or most of our authors can be interpreted as giving answers to them.

The difficulty is that the questions we want answered may not have been seen as questions by the authors. Their view of the subject may have been quite different from ours.

Sometimes, indeed, we have to accept the fact that an author gives *no* answer to one or more of our questions. In that case, we must record him as silent or indeterminate on the question. But even if he does not discuss the question explicitly, we can sometimes find an implicit answer in his book. *If* he had considered the question, we may conclude, he would *then* have answered it in such and such a way. Restraint is necessary here; we cannot put thoughts into our authors' minds, or words into their mouths. But we also cannot depend entirely on their explicit statements about the problem. If we could depend on any one of them in that way, we probably would have no problem to solve.

We have said that the questions must be put in an order that is helpful to us in our investigation. The order depends on the subject, of course, but some general directions can be suggested. The first questions usually have to do with *the existence or character of the phenomenon or idea we are investigating.* If an author says that the phenomenon exists or that the idea has a certain character, then we may ask further questions of his book. These may have to do with *how the phenomenon is known or how the idea manifests itself.* A final set of questions might have to do with *the consequences of the answers to the previous questions.*

We should not expect that all of our authors will answer our questions in the same way. If they did, we would once again have no problem to solve; it would have been solved by consensus. Since the authors will differ, we are faced with having to take the next step in syntopical reading.

STEP 6 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: DEFINING THE ISSUES. If a question is clear, and if we can be reasonably certain that authors answer it in different ways— perhaps pro and con— then an issue has been defined. It is the issue between the authors who answer the question in one way, and those who answer it in one or another opposing way.

STEP 7 Use One of Rules of Reading Methods For Full Analysis of Texts.

STEP 8 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Context Of Author's text.

1. What is Immediate Context?
2. What is the Book Context?

STEP 9 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. What are The Facts Within Context of an Author.

STEP 10 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Grammar Of Texts.

STEP 11 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Logic Of Texts.

Step 12- Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
   - Critical Discourse Analysis_ The Critical Study of Language.
   - Discourse analysis.
   - The Routledge handbook of discourse analysis.

Step 13- Facts within The Context.

Step 14- Do the Fact Checking. Checking Facts, If they are correct or incorrect.

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:

- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries

- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University

- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

Step 15 Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?
P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?

Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

Step 16. Checking Each Fact's Sources, If they Are Reliable or Unreliable. Sources the author used

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Is the Source Reliable or Unreliable?

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.
    34. Eyewitness.

35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries, Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website
    8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

STEP 17 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Rhetoric Of Texts.

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:
   - Rhetoric By Aristotle.
   - A Companion to Rhetoric and Rhetorical Criticism.
   - Ancient Rhetoric From Aristotle to Philostratus.
   - Ancient Rhetoric For Contemporary Students by Sharon Crowley.
   - Art Of Rhetoric By Aristotle.
   - Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
   - Encyclopaedia of Rhetoric.
   - On Rhetoric: Theory of Civic Discourse by Aristotle.
   - Politics and Rhetoric: The Persuasive Power of Metaphor.
   - Rhetoric By Jennifer Richards.
   - Rhetoric In Details By John Benjamins.
   - Rhetorical Grammar By Martha Kolln.
   - Sourcebook on Rhetoric By James Jasinski.
   - The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
   - The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
   - The Rhetoric of Reason By James Crosswhite.
   - Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
   - Writing Arguments: a RHETORIC With Reading by John Ramage.

B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

When only two answers are given by all of the authors examined, the issue is a relatively simple one. Often, more than two alternative answers are given to a question. In that case, the opposing answers must be ordered in relation to one another, and the authors who adopt them classified according to their views.

An issue is truly joined when two authors who understand a question in the same way answer it in contrary or contradictory ways. But this does not happen as often as one might wish. Usually, differences in answers must be ascribed to *different conceptions of the question* as often as to *different views of the subject.* The task of the syntopical reader is to define the issues in such a way as to insure that they are joined as well as may be. Sometimes this forces him to frame the question in a way that is not explicitly employed by any author.

There may be many issues involved in the discussion of the problem we are dealing with, but it is likely that they will fall into groups. Questions about the character of the idea under consideration, for example, may generate a number of issues that are connected. A number of issues revolving around a closely connected set of questions may be termed the *controversy* about that aspect of the subject. Such a controversy may be very complicated, and it is the task of the syntopical reader to sort it out and arrange it in an orderly and perspicuous fashion, even if no author has managed to do that. This sorting and arranging of the controversies, as well as of the constituent issues, brings us to the final step in syntopical reading.

STEP 18 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. So far we have found the relevant passages in the works examined, created a neutral terminology that applies to all or most of the authors examined, framed and ordered a set of questions that most of them can be interpreted as answering, and defined and arranged the issues produced by differing answers to the questions. What then remains to be done?

The first four steps correspond to the first two groups of rules for analytical reading. Those rules, when followed and applied to any book, allowed us to answer the questions, What does it say? and How does it say it? In our syntopical reading project, we are similarly able at this point to answer the same questions about the discussion concerning our problem. In the case of the analytical reading of a single work, two further questions remained to be answered, namely, Is it true? and What of it? In the case of syntopical reading, we are now prepared to address ourselves to similar questions about the discussion.

Let us assume that the problem with which we began was not a simple one, but was rather one of those perennial problems with which thinkers have struggled for centuries, and about which good men have disagreed and can continue to disagree. We should recognize, on this assumption, that our task as syntopical readers is not merely to answer the questions ourselves—the questions that we have so carefully framed and ordered both to elucidate the discussion of the subject and the subject itself. The truth about a problem

of this sort is not found so easily. In fact, we would probably be presumptuous to expect that the truth could be found in any one set of answers to the questions. Rather, it is to be found, if at all, in *the conflict of opposing answers,* many if not all of which may have persuasive evidence and convincing reasons to support them.

The truth, then, insofar as it can be found—the solution to the problem, insofar as that is available to us—consists rather in the *ordered discussion itself* than in any set of propositions or assertions about it. Thus, in order to present this truth to our minds—and to the minds of others—we have to do more than merely ask and answer the questions. We have to ask them in a certain order, and be able to defend that order; we must show how the questions are answered differently and try to say why; and we must be able to point to the texts in the books examined that support our classification of answers. Only when we have done all of this can we claim to have analysed the discussion of our problem. And only then can we claim to have understood it.

We may, indeed, have done more than that. A thorough analysis of the discussion of a problem may provide the groundwork for further productive work on the problem by others. It can clear away the deadwood and prepare the way for an original thinker to make a breakthrough. Without the work of analysis, that might not have been possible, for the dimensions of the problem might not have been visible.

The Need for Objectivity

An adequate analysis of the discussion of a problem or subject matter identifies and reports the major issues, or basic intellectual oppositions, in that discussion. This does not imply that disagreement is always the dominant feature of every discussion. On the contrary, agreement in most cases accompanies disagreement; that is, on most issues, the opinions or views that present opposite sides of the dispute are shared by several authors, often by many. Seldom do we find a solitary exponent of a controversial position.

The agreement of human beings about the nature of things in any field of inquiry establishes some presumption of the truth of the opinions they commonly hold. But their disagreement establishes the counter-presumption—that *none* of the opinions in conflict, whether shared or not, may be wholly true. Among conflicting opinions, one may, of course, be wholly true and all the rest false; but it is also possible that each expresses *some portion of the whole truth;* and, except for flat and isolated contradictions (which are rare in any discussion of the kind of problems we are dealing with here), it is even possible that *all the conflicting opinions may be false,* just as it is possible for that opinion to be false on which all seem to agree. Some opinion as yet unexpressed may be the truth or nearer to it.

This is another way of saying that the aim of a project of syntopical reading is not final answers to the questions that are developed in the course of it, or the final solution of the problem with which the project began. This is particularly true of the report we might try to make of such syntopical reading. It would be dogmatic, not dialectical, if, on any of the important issues that it identified and analyzed, it asserted or tried to prove the truth or falsity of any view. If it did that, the syntopical analysis would cease to be syntopical; it would become simply one more voice in the discussion, thereby losing its detached and objective character.

The point is not that one more voice carries no weight in the forum of human discussion on important issues. The point is that a different type of contribution to the pursuit of understanding can and should be made. And this contribution consists in being resolutely objective and detached throughout. The special quality that a syntopical analysis tries to achieve can, indeed, be summarized in the two words “dialectical objectivity.”

The syntopical reader, in short, tries to *look at all sides and to take no sides.* Of course, he will fail in this exacting ideal. Absolute objectivity is not humanly possible. He may succeed in taking no sides, presenting the issues without prejudice to any partisan point of view, and treating opposing views impartially. But it is easier to take no sides than to look at all sides. In this latter respect, the syntopical reader will undoubtedly fail. All possible sides of an issue cannot be exhaustively enumerated. Nevertheless, he must try.

Taking no sides is easier than looking at all sides, we say, but it remains difficult even so. The syntopical reader must resist certain temptations and know his own mind. Perfect dialectical objectivity is not guaranteed by avoiding *explicit* judgments on the truth of conflicting opinions. Partiality can intrude in a variety of subtle ways —by the manner in which arguments are summarised, by shades of emphasis and neglect, by the tone of a

question or the colour of a passing remark, and by the order in which the various different answers to key questions are presented.

In order to avoid some of these dangers, the conscientious syntopical reader may resort to one obvious device and use it as much as possible. That is, *he must constantly refer back to the actual text of his authors,* reading the relevant passages over and over; and, in presenting the results of his work to a wider audience, he must quote the opinion or argument of an author in the writer's own language. Although it may appear to do so, this does not contradict what we said earlier about the necessity of finding a neutral terminology in which to analyze the problem. That necessity remains, and when summaries of an author's argument are presented, they must be presented in that language and not the author's. But the author's own words, carefully quoted so as not to wrench them out of context, must accompany the summary, so that the reader can judge for himself whether the interpretation of the author is correct.

Only the syntopical reader's firm intention to avoid them can be relied on to prevent other sorts of departure from dialectical objectivity. That ideal demands a deliberate effort to balance question against question, to forgo any comment that might be prejudicial, to check any tendency toward overemphasis or underemphasis. In the last analysis, although a reader may be the judge of the effectiveness of a written report of a dialectical exposition, only the writer of it—only the syntopical reader himself—can know whether he has satisfied these requirements.

An Example of an Exercise in Syntopical Reading: The Idea of Progress

An example may be helpful to explain how syntopical reading works. Let us consider the idea of progress. We do not take this subject at random. We have done extensive research on it. The example would not be so useful to you if that were not so.

The investigation of this important historical and philosophical idea occupied several years. The first task was to produce a list of works to be examined for relevant passages—to amass a bibliography (it finally ran to more than 450 items). This task was accomplished by a series of inspectional readings of several times that many books, articles, and other pieces. It is important to point out that in the case of the idea of progress, as would be true in the case of most other important ideas, many of the items finally judged to be relevant were found more or less by accident, or at least with the help of educated guesses. There were obvious places to start; many recent books contain the word "progress" in their titles. But others do not, and most of the older books, although relevant to the subject, do not even employ the term.

A few fictional and poetical works were read, but on the whole it was decided to concentrate on expository works. We have already observed that including novels, plays, and poems in a syntopical reading project is difficult, and this is so for several reasons. First of all, the backbone or essence of a story is its plot, not its positions on issues. Second, even the most talkative characters seldom take clear positions on an issue—they tend to talk, in the story, about other matters, mainly emotional relations. Third, even if a character does make such a speech—as, for example, Settembrini does about progress in Thomas Mann's *Magic Mountain*—we can never be sure that it is the *author's* view that is being represented. Is the author being ironic in allowing his character to go on about the subject? Is he intending you to see the foolishness of the position, rather than its wisdom? Generally speaking, an intensive effort of synthetic interpretation is required before a fictional work can be placed on one side or another of an issue. The effort is so great, and the results essentially so dubious, that usually it is prudent to abstain.

The discussion of progress in the many works that remained to be examined was, as is usually the case, apparently chaotic. Faced with this fact, the task was, as we have indicated, to develop a neutral terminology. This was a complex undertaking, but one example may help to explain what was done.

The word "progress" itself is used by authors in a number of different ways. Most of these different ways reflect no more than shades of meaning, and they can be handled in the analysis. But the word is used by *some* authors to denote a certain kind of movement forward in history that is not an improvement. Since *most* of the authors use the word to denote a historical change in the human condition that is for the better, and since betterment is of the essence of the conception, the same word could not be applied to both views. In this case, the majority gained the day, and the minority faction had to be referred to as authors who assert "non-meliorative advance" in history. The point is that when

discussing the views of the minority faction, *we could not employ the word "progress," even though the authors involved had used it themselves.*

The third step in syntopical reading is, as we have noted, getting the questions clear. Our intuition about the primary question in the case of progress turned out to be correct upon examination. The first question to ask, the question to which authors can be interpreted as giving various answers, is, Does progress occur in history? Is it a fact that the general course of historical change is in the direction of improvement in man's condition? Basically, there are three different answers to this question put forth in the literature of the subject: (1) Yes, (2) No, and (3) We cannot know. However, there are a number of different ways of saying Yes, several different ways of saying No, and at least three different ways of saying that we cannot know whether human progress occurs or not.

The multifarious and interrelated answers to this primary question constitute what we decided to call the *general* controversy about progress. It is general in the sense that every author we studied who has anything significant to say about the subject takes sides on the various issues that can be identified within it. But there is also a *special* controversy about progress, which is made up of issues that are joined only by progress authors—authors who assert that progress occurs. These issues have to do with the nature or properties of the progress that they all, *being progress authors,* assert is a fact of history. There are only three issues here, although the discussion of each of them is complex. They can be stated as questions: (1) Is progress necessary, or is it contingent on other occurrences? (2) Will progress continue indefinitely, or will it eventually come to an end or "plateau out"? (3) Is there progress in human nature as well as in human institutions—in the human animal itself, or merely in the external conditions of human life?

Finally, there is a set of subordinate issues, as we called them, again only among progress authors, about the *respects* in which progress occurs. We identified six areas in which progress is said by some authors to occur, although other writers deny its occurrence in one or more of these areas—although never in all (since they are by definition authors who assert the occurrence of some kind of progress). The six are:

(1) progress in knowledge, (2) technological progress, (3) economic progress, (4) political progress, (5) moral progress, and (6) progress in the fine arts. The discussion of the last point raises special problems, since in our opinion no author genuinely *asserts* that such aesthetic progress occurs, although a number of writers *deny* that progress occurs in this respect.

The structure of the analysis of progress just described exemplifies our effort to define the issues within the discussion of this subject and to analyze the discussion itself—in other words, to take the fourth and fifth steps in syntopical reading. And something like this must always be done by a syntopical reader, although of course he does not always have to write a long book reporting his researches.[ll]

The Syntopicon and How to Use It

If you read this chapter carefully, you will have noticed that, although we spent some time discussing it, we did not really solve what we called the paradox of syntopical reading. That paradox can be stated thus: Unless you know what books to read, you cannot read syntopically, but unless you can read syntopically, you do not know what to read. Another way to state it is in the form of what may be called the fundamental problem of syntopical reading, namely, that if you do not know where to start, you cannot read syntopically; and even if you have a rough idea of where to begin, the time required to find the relevant books and relevant passages in those books may exceed the time required to take all of the other steps combined.

Actually, of course, there is at least a theoretical resolution of the paradox and solution of the problem. Theoretically, you could know the major literature of our tradition so thoroughly that you had a working notion of where every idea is discussed in it. But if you are such a person, you need no help from anybody, and we cannot tell you anything you do not know about syntopical reading.

On the other hand, even if you did not have this knowledge yourself, you might be able to apply to someone else who did. But you should recognize that if you were able to apply to such a person, his advice might turn out to be almost as much a hindrance as a help. If the subject was one on which he had himself done special research, it would be hard for him merely to tell you the relevant passages to read without telling you *how to read them*—and that might well get in your way. But if he had not done special research on the subject, he might not know a great deal more than yourself, although it might seem so both to him and to you.

What is needed, therefore, is a reference book that tells you where to go to find the relevant passages on a large number of subjects of interest, without at the same time saying how the passages should be read—without prejudging their meaning or significance. The Syntopicon is an example of such a work. Produced in the 1940s, it is a topical index to the set of books titled *Great Books of the Western World.* Under each of some 3,000 topics or subjects, it lists references to pages within the set where that subject is discussed. Some of the references are to passages covering many pages, others are to key paragraphs or even parts of paragraphs. No more time is required to find them than is needed to take down the indicated volume and flip through its pages.

The Syntopicon has one major defect, of course. It is an index of just one set of books (albeit a large one), and it gives only a very rough indication of where passages may be found in other books that are not included in the set. Nevertheless, it always provides you with at least a place to start on any syntopical reading project. And it is also true that the books included in the set are ones that you would almost always want to read anyway, in the course of any such project. Thus the Syntopicon should be able to save the mature scholar or reader who is beginning his research into a certain problem much of the preliminary labor of research, and advance him rapidly to the point where he can begin to think independently about it, because he knows what thinking has been done.

Useful as the Syntopicon is for that kind of reader, it is much more useful for the beginner. The Syntopicon can help such a reader in three ways: initiatively, suggestively, and instructively.

It works *initiatively* by overcoming the initial difficulty that anyone faces when confronted by the classical books of our tradition. These works are a little overpowering. We may wish that we had read them, but often we do not do so. We find ourselves advised from all sides to read them, and we are given reading programs, beginning with the easier works and proceeding to the more difficult ones. But all such programs require the reading of whole books or, at least, the integral reading of large parts of them. It is a matter of general experience that this kind of solution seldom achieves the desired result.

A syntopical reading of these major works with the aid of the Syntopicon provides a radically different solution. The Syntopicon initiates the reading of great books by enabling persons to read particular ones on the subjects in which they are interested; and on those subjects, to read relatively short passages from a large number of authors. It helps us to read *in* the great books before we have read *through* them.

Syntopical reading in the great books, with the help of the Syntopicon, may also work *suggestively.* Starting from the reader's existing interest in a particular subject, it may arouse or create other interests in related subjects. And once started on an author, it is hard not to explore the context. Before you know it, you have read a good portion of the book.

Finally, syntopical reading with the aid of the Syntopicon works *instructively,* in three distinct ways. This, in fact, is one of the major benefits of this level of reading.

***First,* the topic in connection with which the passage is being read serves to give direction to the reader in interpreting the passage. But it does not tell him what the passage means, since the passage may be relevant to the topic in several or many different ways. Hence the reader is called upon to *discover precisely what relevance the passage has to the topic.* To learn to do this is to acquire a major skill in the art of reading.**

***Second,* the collection of a number of passages on the same topic, but from different works and different authors, serves to *sharpen the reader's interpretation of each passage read.* Sometimes, when passages from the same book are read in sequence and in the context of one another, each becomes clearer. Sometimes the meaning of each of a series of contrasting or conflicting passages from different books is accentuated when they are read against one another. And sometimes the passages from one author, by amplifying or commenting on the passages from another, materially help the reader's understanding of the second author.**

***Third,* if syntopical reading is done on a number of different subjects, the fact that the same passage will often be found cited in the Syntopicon under two or more subjects will have its instructive effect. The passage has an amplitude of**

meaning that the reader will come to perceive as he interprets it somewhat differently in relation to different topics. Such multiple interpretation not only is a basic exercise in the art of reading but also tends to make the mind habitually alert to the many strains of meaning that any rich or complex passage can contain.

Because we believe that the Syntopicon can be useful to any reader wishing to read in the manner described in this chapter, be he a beginner or a mature scholar and researcher, we have taken the liberty of adopting its name for this level of reading. We hope the reader will forgive us what may seem to be a small self-indulgence. In return for that forgiveness, we would like to point out an important fact. There is a considerable difference between syntopical reading, with a small "s," and Syntopical reading, where the latter phrase refers to reading the great books with the help of the Syntopicon. Syntopical reading, in the latter sense, can constitute a *part* of any syntopical reading project where the term is used in the former sense, and perhaps it would always be wise to start there. But syntopical reading with a small "s" is a term of much wider application than Syntopical reading.

On the Principles That Underlie Syntopical Reading

There are those who say that syntopical reading (in the broader sense just mentioned) is impossible. It is wrong, they say, to impose a terminology, even a "neutral" one (if there is any such thing), on an author. His own terminology must be treated as sacrosanct, because books should never be read "out of context," and besides, translation from one set of terms to another is always dangerous because words are not controllable like mathematical symbols. Further, the objectors maintain, syntopical reading involves reading authors widely separated in space and time, and differing radically in style and approach, as if they were members of the same universe of discourse, as if they were talking to one another—and this distorts the facts of the matter. Each author is a little universe in himself, and although connections can be made between different books written by the same author at different times (even here there are dangers, they warn), there are no clear connections relating one author to another. They maintain, finally, that the *subjects* that authors discuss, as such, are not as important as the *ways* in which they discuss them. The style, they say, is the man; and if we ignore *how* an author says something, in the process of trying to discover *what* he says, we will miss both kinds of understanding.

It should be apparent that we disagree with all of those charges, and therefore an answer to each of them is in order. Let us take them one at a time.

First, to the point about *terminology.* To deny that an idea can be expressed in more than one set of terms is similar to denying that translation is possible from one natural language to another. That denial is made, of course. Recently, for example, we read an introduction to a new translation of the Koran that began by saying that to translate the Koran is impossible. But since the author then proceeded to explain how he had done it, we could only assume that he meant that translation is particularly difficult in the case of a

book held to be holy by large numbers of people. We would agree. But the difficult is not the impossible.

In fact, the view that an author's terms must be treated as sacrosanct is probably always merely another way of saying that it is difficult to translate from one terminology to another. We would agree to that, too. But again, the difficult is not the impossible.

Second, to the point about *the separateness and uniqueness of authors.* This comes down to saying that if Aristotle, for example, walked into our office, attired no doubt in robes and accompanied by an interpreter who knew both modern English and classical Greek, we would not be able to understand him or he us. We simply do not believe it. Doubtless Aristotle would be amazed at some of the things he saw, but we are quite confident that within ten minutes we could, if we wanted to, be engaged in a philosophical discussion of problems that we shared. There might be recurrent difficulties about certain conceptions, but as soon as we recognized them as such, we could resolve them.

If that is possible (and we do not really think anyone would deny it), then it is not impossible for one book to "talk" to another through the medium of an interpreter—namely, you, the syntopical reader. Care is required, of course, and you should know both "languages"—that is, both books—as well as you can. But the problem is not insuperable, and it is simply foolish to suggest that it is.

Finally, to the point about the *manner or style.* This is equivalent, we think, to saying that there is no rational communication among men, but that all men communicate at the emotional level, which is the same level at which they communicate with pets. If you say "I love you" to your dog in an angry tone of voice, he will cower; but he does not understand you. Can anyone seriously assert that there is *nothing more* than tone of voice or gesture in vocal communications between two human beings? Tone of voice is important, particularly when emotional relations are the primary content of the communication; and body language probably has things to tell us if we will only listen (look?). But there is something else, too, in human communication. If you ask someone how to reach the exit, and he tells you to follow Corridor B, it does not matter what tone of voice he employs. He is either right or wrong, lying or telling the truth, but the point is that you will soon find that out by following Corridor B. You have understood *what* he said as well as reacting, no doubt in all sorts of ways, to *how* he said it.

Believing, then, that translation is possible (because it is done all the time), that books can "talk" to one another (because human beings do so), and that there is an objective, rational content of communication between human beings when they are trying to be rational (because we can and do learn from each other), we believe that syntopical reading is possible.

Summary of Syntopical Reading

We have now completed our discussion of syntopical reading. Let us therefore display the various steps that must be taken at this level of reading in outline form.

As we have seen, there are two main stages of syntopical reading. One is preparatory, and the other is syntopical reading proper. Let us write out all of these steps for review.

I. SURVEYING THE FIELD PREPARATORY TO SYNTOPICAL READING

1. Create a tentative bibliography of your subject by recourse to library catalogues, advisors, and bibliographies in books.

2. Inspect *all* of the books on the tentative bibliography to ascertain which are germane to your subject, and also to acquire a clearer idea of the subject.

Note: These two steps are not, strictly speaking, chronologically distinct; that is, the two steps have an effect on each other, with the second, in particular, serving to modify the first.

II. Use Rules of Reading by reading by reading the various text.
SYNTOPICAL READING OF THE BIBLIOGRAPHY AMASSED IN STAGE I

1. Inspect the books already identified as relevant to your subject in Stage I in order to find the most relevant passages.

2. Use Rules of Reading by reading the various text. Bring the authors to terms by constructing a neutral terminology of the subject that all, or the great majority, of the authors can be interpreted as employing, whether they actually employ the words or not.

3. Use Rules of Reading by reading the various text. Establish a set of neutral propositions for all of the authors by framing a set of questions to which all or most of the authors can be interpreted as giving answers, whether they actually treat the questions explicitly or not.

4. Use Rules of Reading by reading the various text. Define the issues, both major and minor ones, by ranging the opposing answers of authors to the various questions on one side of an issue or another. You should remember that an issue does not always exist explicitly between or among authors, but that it sometimes has to be constructed by interpretation of the authors' views on matters that may not have been their primary concern.

5. Use Rules of Reading by reading the various text. Analyze the discussion by ordering the questions and issues in such a way as to throw maximum light on the subject. More general issues should precede less general ones, and relations among issues should be clearly indicated.

Note: Dialectical detachment or objectivity should, ideally, be maintained throughout. One way to insure this is always to accompany an interpretation of an author's views on an issue with an actual quotation from his text.

We have now completed the task that lay before us at the beginning of this book. We have shown that activity is the essence of good reading, and that the more active reading is, the better it is.

We have defined active reading as the asking of questions, and we have indicated what questions must be asked of any book, and how those questions must be answered in different ways for different kinds of books.

We have identified and discussed the four levels of reading, and shown how these are cumulative, earlier or lower levels being contained in later or higher ones. Consequent upon our stated intention, we have laid more stress upon the later and higher levels of reading than upon the earlier and lower ones, and we have therefore emphasized analytical and syntopical reading. Since analytical reading is probably the most unfamiliar kind for most readers, we have discussed it at greater length than any of the other levels, giving its rules and explaining them in the order in which they must be applied. But almost everything that was said of analytical reading also applies, with certain adaptations that were mentioned in the last chapter, to syntopical reading as well.

We have completed our task, but you may not have completed yours. We do not need to remind you that this is a practical book, nor that the reader of a practical book has a special obligation with respect to it. If, we said, the reader of a practical book accepts the ends it proposes and agrees that the means recommended are appropriate and effective, then he must act in the way proposed. You may not accept the primary aim we have endorsed—namely, that you should be able to read as well as possible—nor the means we have proposed to reach it—namely, the rules of inspectional, analytical, and syntopical reading. (In that case, however, you are not likely to be reading this page.) But if you do accept that aim and agree that the means are appropriate, then you must make the effort to read as you probably have never read before.

That is your task and your obligation. Can we help you in it in any way?

We think we can. The task falls mainly on you—it is you who, henceforth, must do all the work (and obtain all the benefits). But there are several things that remain to be said, about the end and the means. Let us discuss the latter first.

What Good Books Can Do for Us

“Means” can be interpreted in two ways. In the previous paragraph, we interpreted the term as referring to the rules of reading, that is, the *method* by which you become a better reader. But “means” can also be interpreted as referring to *the things you read.* Having a method without materials to which it can be applied is as useless as having the materials with no method to apply to them.

In the latter sense of the term, the means that will serve you in the further improvement of your reading are the books you will read. We have said that the method

applies to anything you read, and that is true, if you understand by the statement any *kind* of book—whether fiction or nonfiction, imaginative or expository, practical or theoretical. But in fact, the method, at least as it is exemplified in our discussion of analytical and syntopical reading, *does not apply to every book.* The reason is that some books do not require it.

We have made this point before, but we want to make it now again because of its relevance to the task that lies before you. *If you are reading in order to become a better reader, you cannot read just any book or article.* You will not improve as a reader if all you read are books that are well within your capacity. You must tackle books that are beyond you, or, as we have said, books that are over your head. Only books of that sort will make you stretch your mind. And unless you stretch, you will not learn.

Thus, it becomes of crucial importance for you not only to be able to read well but also to be able to identify those books that make the kinds of demands on you that improvement in reading ability requires. A book that can do no more than amuse or entertain you may be a pleasant diversion for an idle hour, but you must not expect to get anything but amusement from it. We are not against amusement in its own right, but we do want to stress that *improvement in reading skill does not accompany it.* The same goes for a book that merely informs you of facts that you did not know without adding to your understanding of those facts. Reading for information does not stretch your mind any more than reading for amusement. It may seem as though it does, but that is merely because your mind is fuller of facts than it was before you read the book. However, your mind is essentially in the same condition that it was before. There has been a quantitative change, but no improvement in your skill.

We have said many times that the good reader makes demands on himself when he reads. He reads actively, effortfully. Now we are saying something else. The books that you will want to practice your reading on, particularly your analytical reading, *must also make demands on you.* They must seem to you to be beyond your capacity. You need not fear that they really are, because there is no book that is completely out of your grasp if you apply the rules of reading to it that we have described. This does not mean, of course, that these rules will accomplish immediate miracles for you. There are certainly some books that will continue to extend you no matter how good a reader you are. Actually, those are the very books that you must seek out, because they are the ones that can best help you to become an ever more skillful reader.

Some readers make the mistake of supposing that such books—the ones that provide a constant and never-ending challenge to their skill—are always ones in relatively unfamiliar fields. In practice, this comes down to believing, in the case of most readers, that only scientific books, and perhaps philosophical ones, satisfy the criterion. But that is far from the case. We have already remarked that the great scientific books are in many ways easier to read than non-scientific ones, because of the care with which scientific authors help you to come to terms, identify the key propositions, and state the main arguments. These helps are absent from poetical works, and so in the long run they are quite likely to be the hardest, the most demanding, books that you can read. Homer, for

example, is in many ways harder to read than Newton, despite the fact that you may get more out of Homer the first time through. The reason is that Homer deals with subjects that are harder to write well about.

The difficulties that we are talking about here are very different from the difficulties that are presented by a bad book. It is hard to read a bad book, too, for it defies your efforts to analyze it, slipping through your fingers whenever you think you have it pinned down. In fact, in the case of a bad book, there is really nothing *to* pin down. It is not worth the effort of trying. You receive no reward for your struggle.

A good book does reward you for trying to read it. The best books reward you most of all. The reward, of course, is of two kinds. First, there is the improvement in your reading skill that occurs when you successfully tackle a good, difficult work. Second—and this in the long run is much more important—a good book can teach you about the world and about yourself. You learn more than how to read better; you also learn more about life. You become wiser. Not just more knowledgeable— books that provide nothing but information can produce that result. But wiser, in the sense that you are more deeply aware of the great and enduring truths of human life.

There are some human problems, after all, that have no solution. There are some relationships, both among human beings and between human beings and the nonhuman world, about which no one can have the last word. This is true not only in such fields as science and philosophy, where it is obvious that final understanding about nature and its laws, and about being and becoming, has not been achieved by anyone and never will be; it is also true of such familiar and everyday matters as the relation between men and women, or parents and children, or man and God. These are matters about which you cannot think too much, or too well. The greatest books can help you to think better about them, because they were written by men and women who thought better than other people about them.

The Pyramid of Books

The great majority of the several million books that have been written in the Western tradition alone—more than 99 per cent of them—will not make sufficient demands on you for you to improve your skill in reading. This may seem like a distressing fact, and the percentages may seem an overestimate. But obviously, considering the numbers involved, it is true. These are the books that can be read only for amusement or information. The amusement may be of many kinds, and the information may be interesting in all sorts of ways. But you should not expect to learn anything of importance from them. In fact, you do not have to read them— analytically—at all. Skimming will do.

There is a second class of books from which you can learn—both how to read and how to live. Less than one out of every hundred books belongs in this class— probably it is more like one in a thousand, or even one in ten thousand. These are the good books, the ones that were carefully wrought by their authors, the ones that convey to the reader

significant insights about subjects of enduring interest to human beings. There are in all probably no more than a few thousand such books. They make severe demands on the reader. They are worth reading analytically— once. If you are skillful, you will be able to get everything out of them that they can give in the course of one good reading. They are books that you read once and then put away on your shelf. You know that you will never have to read them again, although you may return to them to check certain points or to refresh your memory of certain ideas or episodes. (It is in the case of such books that the notes you make in the margin or elsewhere in the volume are particularly valuable.)

How do you know that you do not ever have to read such books again? You know it by your own mental reaction to the experience of reading them. Such a book stretches your mind and increases your understanding. But as your mind stretches and your understanding increases, you realize, by a process that is more or less mysterious, that you are not going to be changed any more in the future by this book. You realize that you have grasped the book in its entirety. You have milked it dry. You are grateful to it for what it has given you, but you know it has no more to give.

Of the few thousand such books there is a much smaller number—here the number is probably less than a hundred—that cannot be exhausted by even the very best reading you can manage. How do you recognize this? Again it is rather mysterious, but when you have closed the book after reading it analytically to the best of your ability, and place it back on the shelf, you have a sneaking suspicion that there is more there than you got. We say “suspicion” because that may be all it is at this stage. If you knew what it was that you had missed, your obligation as an analytical reader would take you back to the book immediately to seek it out. In fact, you cannot put your finger on it, but you know it is there. You find that you cannot forget the book, that you keep thinking about it and your reaction to it. Finally, you return to it. And then a very remarkable thing happens.

If the book belongs to the second class of books to which we referred before, you find, on returning to it, that there was *less there than you remembered.* The reason, of course, is that you yourself have grown in the meantime. Your mind is fuller, your understanding greater. The book has not changed, but you have. Such a return is inevitably disappointing.

But if the book belongs to the highest class—the very small number of inexhaustible books—you discover on returning that *the book seems to have grown with you.* You see new things in it—whole sets of new things—that you did not see before. Your previous understanding of the book is not invalidated (assuming that you read it well the first time); it is just as true as it ever was, and in the same ways that it was true before. But now it is true in still other ways, too.

How can a book grow as you grow? It is impossible, of course; a book, once it is written and published, does not change. But what you only now begin to realize is that the book was so far above you to begin with that it has remained above you, and probably always will remain so. Since it is a really good book—a great book, as we might say—it is accessible at different levels. Your impression of increased understanding on your

previous reading was not false. The book truly lifted you then. But now, even though you have become wiser and more knowledgeable, it can lift you again. And it will go on doing this until you die.

There are obviously not many books that can do this for any of us. Our estimate was that the number is considerably less than a hundred. But the number is *even less than that for any given reader.* Human beings differ in many ways other than in the power of their minds. They have different tastes; different things appeal more to one person than to another. You may never feel about Newton the way you feel about Shakespeare, either because you may be able to read Newton so well that you do not have to read him again, or because mathematical systems of the world just do not have all that appeal to you. Or, if they do—Charles Darwin is an example of such a person—then Newton may be one of the handful of books that are great for you, and not Shakespeare.

We do not want to state authoritatively that any particular book or group of books must be great for you, in this sense, although in our first Appendix we do list those books that experience has shown are capable of having this kind of value for many readers. Our point, instead, is that *you should seek out the few books that can have this value for you.* They are the books that will teach you the most, both about reading and about life. They are the books to which you will want to return over and over. They are the books that will help you to grow.

The Life and Growth of the Mind

There is an old test—it was quite popular a generation ago—that was designed to tell you which books are the ones that can do this for you. Suppose, the test went, that you know in advance that you will be marooned on a desert island for the rest of your life, or at least for a long period. Suppose, too, that you have time to prepare for the experience. There are certain practical and useful articles that you would be sure to take with you. You will also be allowed ten books. Which ones would you select?

Trying to decide on a list is instructive, and not only because it may help you to identify the books that you would most like to read and reread. That, in fact, is probably of minor importance, compared with what you can learn about yourself when you imagine what life would be like if you were cut off from all the sources of amusement, information, and understanding that ordinarily surround you. Remember, there would be no radio or television on the island, and no lending library. There would be just you and ten books.

This imagined situation seems bizarre and unreal when you begin to think about it. But is it actually so unreal? We do not think so. We are all to some extent persons marooned on a desert island. We all face the same challenge that we would face if we really were there—the challenge of finding the resources within ourselves to live a good human life.

There is a strange fact about the human mind, a fact that differentiates the mind sharply from the body. The body is limited in ways that the mind is not. One sign of this is that the body does not continue indefinitely to grow in strength and develop in skill and

grace. By the time most people are thirty years old, their bodies are as good as they will ever be; in fact, many persons' bodies have begun to deteriorate by that time. *But there is no limit to the amount of growth and development that the mind can sustain.* The mind does not stop growing at any particular age; only when the brain itself loses its vigor, in senescence, does the mind lose its power to increase in skill and understanding.

This is one of the most remarkable things about human beings, and it may actually be the major difference between *Homo sapiens* and the others animals, which do not seem to grow mentally beyond a certain stage in their development. But this great advantage that man possesses carries with it a great peril. *The mind can atrophy,* like the muscles, *if it is not used.* Atrophy of the mental muscles is the penalty that we pay for not taking mental exercise. And this is a terrible penalty, for there is evidence that atrophy of the mind is a mortal disease. There seems to be no other explanation for the fact that so many busy people die so soon after retirement. They were kept alive by the demands of their work upon their minds; they were propped up artificially, as it were, by external forces. But as soon as those demands cease, having no resources within themselves in the way of mental activity, they cease thinking altogether, and expire.

Television, radio, and all the sources of amusement and information that surround us in our daily lives are also artificial props. They can give us the impression that our minds are active, because we are required to react to stimuli from outside. But the power of those external stimuli to keep us going is limited. They are like drugs. We grow used to them, and we continuously need more and more of them. Eventually, they have little or no effect. Then, if we lack resources within ourselves, we cease to grow intellectually, morally, and spiritually. And when we cease to grow, we begin to die.

Reading well, which means reading actively, is thus not only a good in itself, nor is it merely a means to advancement in our work or career. It also serves to keep our minds alive and growing.

Deep Work and Research

Method 24-The Craft of Research

Part I

Research, Researchers, and Readers

1.1 WHAT IS RESEARCH?

In the broadest terms, we do research whenever we gather information to answer a question that solves a problem:

PROBLEM: Where do I find a new head gasket for my ’65 Mustang?

RESEARCH: Look in the yellow pages for an auto-parts store, then call to see if it has one in stock.

PROBLEM: To settle a bet, I need to know when Michael Jordan was born.

RESEARCH: You Google “Michael Jordan birthday.”

PROBLEM: I’m just curious about a new species of fish.

RESEARCH: You search the Internet for articles in newspapers and academic journals.

We all do that kind of research every day, and though we rarely write it up, we rely on those who wrote up theirs: Jordan’s biographers, the fish discoverers, the publishers of the yellow pages and the catalogs of the auto-parts suppliers—they all wrote up their research because they knew that one day someone would have a question that they could answer.

If you’re preparing to do a research project not because you want to but because it’s been assigned, you might think that it is just make-work and treat it as an empty exercise. We hope you won’t. Done well, your project prepares you to join the oldest and most esteemed of human conversations, one conducted for millennia among philosophers, engineers, biologists, social scientists, historians, literary critics, linguists, theologians, not to mention CEOs, lawyers, marketers, investment managers—the list is endless.

Right now, if you are a beginner, you may feel that the conversation is one-sided, that you have to listen more than you can speak because you have little to contribute. If you are a student, you may feel that you have only one reader: your teacher. All that may be

true, for the moment. But at some point, you will join a conversation that, at its best, can help you and your community free us from ignorance, prejudice, and the half-baked ideas that so many charlatans try to impose on us. It is no exaggeration to say that, maybe not today or tomorrow but one day, the research you do and the arguments you make using it can improve if not the whole world, then at least your corner of it.

1.2 WHY WRITE IT UP?

For some of you, though, the invitation to join this conversation may still seem easy to decline. If you accept it, you'll have to find a good question, search for sound data, formulate and support a good answer, and then write it all up. Even if you turn out a first-rate paper, it may be read not by an eager world but only by your teacher. *And, besides,* you may think, *my teacher knows all about my topic. What do I gain from writing up my research, other than proving I can do it?* One answer is that we write not just to share our work, but to improve it before we do.

1.2.1 Write to Remember

Experienced researchers first write just to remember what they've read. A few talented people can hold in mind masses of information, but most of us get lost when we think about what Smith found in light of Wong's position, and compare both to the odd data in Brunelli, especially as they are supported by Boskowitz—*but what was it that Smith said?* When you don't take notes on what you read, you're likely to forget or, worse, misremember it.

1.2.2 Write to Understand

A second reason for writing is to see larger patterns in what you read. When you arrange and rearrange the results of your research in new ways, you discover new implications, connections, and complications. Even if you could hold it all in mind, you would need help to line up arguments that pull in different directions, plot out complicated relationships, sort out disagreements among experts. *I want to use these claims from Wong, but her argument is undercut by Smith's data. When I put them side by side, I see that Smith ignores this last part of Wong's argument. Aha! If I introduce it with this part from Brunelli, I can focus on Wong more clearly.* That's why careful researchers never put off writing until

they've gathered all the data they need: they write from the start of their projects to help them assemble their information in new ways.

1.2.3 Write to Test Your Thinking

A third reason to write is to get your thoughts out of your head and onto paper, where you'll see what you really *can* think. Just about all of us, students and professionals alike, believe our ideas are more compelling in the dark of our minds than they turn out to be in the cold light of print. You can't know how good your ideas are until you separate them from the swift and muddy flow of thought and fix them in an organized form that you—and your readers—can study.In short, we write to remember more accurately, understand better, and evaluate what we think more objectively. (And as you will discover, the more you write, the better you read.)

1.3 WHY A FORMAL PAPER?

But even when they agree that writing is an important part of learning, thinking, and understanding, some still wonder why they can't write up their research in their own way, why they have to satisfy demands imposed by a community that they have not joined (or even want to) and conform to conventions they did nothing to create. *Why should I adopt language and forms that are not mine? Aren't you just trying to turn me into an academic like yourself? If I write as you expect me to, I risk losing my identity.*

Such concerns are legitimate (most teachers wish students would raise them more often). But it would be a feeble education that did not change you at all, and the deeper your education, the more it will change the "you" that you are or want to be. That's why it is so important to choose carefully what you study and with whom. But it would be a mistake to think that learning to report sound research must threaten your true identity. It will change the way you think, but only by giving you more ways of thinking. You will be different by being freer to choose whom you want to be and what you want to do with your life.

But the most important reason for learning to write in ways readers expect is that when you write for others, you demand more of yourself than when you write for yourself alone. By the time you fix your ideas in writing, they are so familiar to you that you need help to see them not for what you want them to be but for what they really are. You will understand your own work better when you try to anticipate your readers' inevitable and critical

questions: *How have you evaluated your evidence? Why do you think it's relevant? What ideas have you considered but rejected?*

All researchers, including us, can recall moments when in writing to meet their readers' expectations, they found a flaw or blunder in their thinking or even discovered a new insight that escaped them in a first draft written for themselves. You can do that only once you imagine and then meet the needs and expectations of informed and careful readers. When you do that, you create what we call a *rhetorical community* of shared values.

You might think, *OK, I'll write for readers, but why not in my own way?* The traditional forms that readers expect are more than just empty vessels into which you must pour your ideas. They also help writers think and communicate in ways they might not otherwise, and they embody the shared values of a research community. Whatever community you join, you'll be expected to show that you understand its practices by presenting your research in the standard forms, or *genres*, that a community uses to represent *what* it knows and *how* it knows. The various genres of research-based writing—the research paper, the scholarly article, the research report, the conference paper, the legal brief, and a great many others—have evolved to meet the needs of the communities that use them. Relatively stable, they allow both newcomers and longtime members of a community to come together through shared practices and expectations. Once you know the genres that belong to and define your particular research community, you'll be better able to answer your community's predictable questions and understand what its members care about and why. As you learn to write the genres of a field or profession, you become a member of that research community.

But as different as research communities are, what counts as good work is the same, whether it's in the academic world or the world of government, commerce, or technology. If you learn to do research well now, you gain an immense advantage in the kind of research you will do later, no matter where you do it.

1.4 WRITING IS THINKING

Writing up your research is, finally, thinking with and for your readers. When you write for others, you disentangle your ideas from your memories and wishes, so that you—and others—can explore, expand, combine, and understand them more fully. Thinking for

others is more careful, more sustained, more insightful—in short, more thoughtful—than just about any other kind of thinking.

You can, of course, take the easy way: do just enough to satisfy your teacher. This book will help you do that, but you'll shortchange yourself if that's all you do. If instead you find a topic that *you* care about, ask a question that *you* want to answer, then pursue that answer as best you can, your project can have the fascination of a mystery whose solution richly rewards your efforts. Nothing contributes more to successful research than your commitment to it, and nothing teaches you more about how to think than making a successful (or even unsuccessful) argument using it.

> Some of the world's most important research has been done by those who persevered in the face of indifference or even hostility, because they never lost faith in their vision. The geneticist Barbara McClintock struggled for years unappreciated because her research community considered her work uninteresting. But she believed in it and pressed on. When her colleagues finally realized that she had already answered questions that they were just starting to ask, she won science's highest honor, the Nobel Prize.

We wish we could tell you how to balance your belief in the worth of your project with the need to accommodate the demands of teachers and colleagues, but we cannot. If you believe in what you're doing and cannot find anyone else who shares your beliefs, all you can do is put your head down and press on. With our admiration.

2 Connecting with Your Reader

Creating a Role for Yourself and Your Readers

> Research counts for little if few read it. Yet even experienced researchers sometimes forget to keep their readers in mind as they plan and draft. In this chapter, we show you how to think about readers even before you begin your project.

Most of the important things we do, we do with others. Some students think research is different. They imagine the lone scholar in a hushed library. But no place is more filled with imagined voices than a library or lab. The view of research you see walking by these sites is only part of the story. When you read a book or a scientific paper, you silently converse with its writers—and through them with everyone else they have read. In fact, every time you go to a written source for information, you join a conversation between writers and readers that began more than five thousand years ago. And when you report your own research, you add your voice and can hope that other voices will respond to you, so that you can in turn respond to them. So it goes and, we hope, will continue for a long time to come.

2.1 CONVERSING WITH YOUR READERS

Conversations are social activities in which we are expected to play our parts. Face-to-face, we can judge how well we and others do that by sensing how a conversation is going. Do we treat each other as equals, speaking and listening civilly, answering each other's questions directly? Or does one of us seem to be playing the role of expert, assigning others the role of audience? We can judge how well a conversation is going as we have it, and we can adjust our roles and behavior to repair mistakes and misunderstandings as they occur. But writing is an *imagined* conversation. Once we decide what role to play and what role to assign our readers, those roles are fixed. If as we read we think, *Well, Abrams acknowledges Stanik's evidence, but he's dogmatic in criticizing it and ignores obvious counterexamples*, Abrams can't change what we read next to recover from our judgment.

Of course, judgments go both ways: just as readers judge writers, so writers also judge readers, but they do so before they write. Consider these two sentences:

> Interruption of REM sleep has been shown not only to inhibit memory consolidation, especially for declarative memories, but also to significantly impair cognitive processes dependent on working memory function.
>
> If you don't get enough sleep, not only will you struggle to retain facts and concepts, but your working memory function will also be impaired, making it difficult for you to hold information in mind and consequently to understand, think, and learn.

Both writers make judgments about their readers' needs and goals. The first addresses herself to knowledgeable colleagues interested in learning about the psychology of sleep and memory. She therefore focuses on abstract concepts and freely uses technical terms. The second presents himself as an expert patiently explaining a complicated matter to readers who know little about it, and so he largely avoids technical vocabulary. He also assumes that his readers want practical advice, and so he addresses them directly as "you" and shows them what his information means to them.

The two sentences are very different: the first reads like an excerpt from an advanced textbook; the second, like it comes from a guide on good study habits. But both would be effective if their writers judged their readers correctly.

But suppose the writers switched passages. Readers ignorant of cognitive psychology looking for practical advice would think that the writer of the first was indifferent to their needs; readers knowledgeable about sleep and memory would think that the writer of the second was talking down to them. When writers misjudge their readers in this way, they risk losing them.

In fact, writers can't avoid creating *some* role for themselves and their readers, planned or not. So those roles are worth thinking about from the beginning, before you write a word. If you ignore or miscast your readers, you'll leave so many traces of that mistake in your early drafts that you won't easily fix them in the final one.

In writing this book, we tried to imagine you—what you're like, what you know about research, whether you even care about it. We imagined a *persona* for you, a role we hoped you would adopt: someone who is interested in learning how to do and report research and who shares our belief in its importance (or at least is open to being persuaded). Then we imagined a persona of our own: writers committed to the value of research, interested in sharing how it works, talking not *at* you like a lecturer or *down* to

you like a pedant, but *with* the “you” we hoped you want to become. We tried to speak as easily to those of you starting your first project as to those of you doing advanced work. We hoped that new researchers would not be frustrated when we discussed issues they haven’t yet faced and that more experienced readers would be patient as we covered familiar ground. Only you can judge how well we’ve succeeded.

2.2 UNDERSTANDING YOUR ROLE

Since few people read formal research papers for entertainment, you have to create a relationship that encourages them to see why it’s in their interest to read yours. That’s not easy. Too many beginning researchers offer readers a relationship that caricatures a bad classroom: *Teacher, I know less than you. So my role is to show you how many facts I can dig up. Yours is to say whether I’ve found enough to give me a good grade.* Do that and you turn your project into a pointless drill that demeans both you and your teacher. Worse, you cast yourself in a role exactly opposite to that of a true researcher.

In true research, you must switch the roles of student and teacher. When you do research, you learn something that others don’t know. So when you report it, you must think of your reader as someone who doesn’t know it *but needs to* and yourself as someone who will *give her reason to want to know it.* You must imagine a relationship that goes beyond *Here are some facts I’ve dug up about fourteenth-century Tibetan weaving. Are they enough of the right ones?* There are three better reasons for offering those facts; the third is most common in academic research.

2.2.1 I’ve Found Some New and Interesting Information

You take the first step toward true research when you say to your reader, *Here are some facts about fourteenth-century Tibetan weaving that you do not know and may find interesting.* This offer assumes, of course, that your reader wants to know. But even if not, you must still cast yourself in the role of someone who has found something your reader will find interesting and your reader as someone who wants to know, *whether she really will or not*. Down the road, you’ll be expected to find (or create) a community of readers who not only share an interest in your topic (or can be convinced to), but also have questions about it that you can answer. But even if you don’t have that audience right now, you must write as if you do. You must present yourself as interested in, even enthusiastic about, wanting to share something new, because the interest you show in your work roughly predicts the interest your reader will take in it.

2.2.2 I've Found a Solution to an Important Practical Problem

You take a step toward more significant research when you can say to readers not just *Here are some facts that should interest you*, but *These facts will help you do something to solve a problem you care about*. That is the kind of research that people do every day in business, government, and the professions. They confront practical problems whose solutions require research into the facts of the matter, first to understand the problem, then to figure out how to solve it—problems ranging from insomnia to falling profits to terrorism.

To help new researchers learn that role, teachers sometimes invent "real world" scenarios: an environmental science professor might assign you to write a report for the director of the state Environmental Protection Agency on how to clean up a local lake. In this scenario you are playing the role not of a student delivering data to a teacher, but of a professional giving practical advice to someone who needs it. To make your report credible, however, you must use the right terminology, cite the right sources, find and present the right evidence, all in the right format. But most important, you have to design your report around a specific *intention* that defines your role: to advise a decision maker on what to *do* to solve a problem. That kind of research is typical in the world at large but is less common in academic research than the next one.

2.2.3 I've Found an Answer to an Important Question

Although academic researchers sometimes advise EPA directors on what to do, their more common role is that of scholars who help their research community simply understand something better. Others might use their findings to solve a practical problem—a discovery about the distribution of prime numbers, for example, helped cryptologists design an unbreakable code. But that research itself was aimed at solving not the *practical* problem of keeping secrets, but the *conceptual* problem of not entirely understanding prime numbers. Some researchers call this kind of research "pure" as opposed to "applied."

Teachers occasionally invent "real world" scenarios involving conceptual problems: a political science professor asks you to play the role of a senator's intern researching the voting habits of out-of-state college students. But more

typically they expect you to imagine yourself as what you are learning to be: a researcher addressing a community of other researchers interested in issues that they want to understand better. Your report on fourteenth-century Tibetan weaving, for example, could

possibly help rug designers sell more rugs, but its main aim is to help scholars better understand something about Tibetan art, such as *How did fourteenth-century Tibetan rugs influence the art of modern China?*

2.3 IMAGINING YOUR READERS' ROLE

You establish your side of the relationship with your readers when you adopt one of those three roles—*I have information for you*; *I can help you fix a problem*; *I can help you understand something better*. You must, however, cast your readers in a complementary role by offering them a social contract: *I'll play my part if you play yours.* But that means you have to understand their role. If you cast them in a role they won't accept, you're likely to lose them entirely. In this case, the old advice to "consider your audience" means that you must report your research in a way that motivates your readers to play the role you have imagined for them.

For example, suppose you're an expert on blimps and zeppelins. You've been asked to share your research with three different groups with three different reasons for wanting to hear about it. How they receive you will depend on how accurately you imagine the role each intends to play and how well you match your role to theirs. For that, you must understand what they want and what they are in return willing *and able* to do for you.

2.3.1 Entertain Me

Imagine the first group that invited you to speak is the local Zeppelin Club. Its members are not experts, but they know a lot about zeppelins. They read about them, visit historic sites, and collect zeppelin memorabilia. You decide to share some new facts you've found in a letter from your Great-Uncle Otto describing his transatlantic zeppelin flight in 1936, along with some photographs and a menu he saved. His letter comments on the grilled oysters he had for dinner and tells a funny story about why he happened to take the trip in the first place.

In planning your talk, you judge that what's at stake is just a diverting hour of zeppelin trivia. You meet your side of the bargain when you share whatever you think might interest them—hunches, speculation, even unsubstantiated rumors. You won't show PowerPoint slides, present data, or cite scholarly sources to substantiate your claims. Your audience will play its role by listening with interest, asking questions, maybe sharing their own

anecdotes. You don't expect them to challenge the authenticity of the letter from Great-Uncle Otto or question how the photos are relevant to the social history of zeppelins, much less of lighter-than-air travel in general. Your job is to give an engaging talk; theirs is to be amiably engaged.

Some beginning researchers imagine their readers belong to a Zeppelin Club, already fascinated by their topic and eager to hear anything new about it. While that sometimes works for experts with the right audience (see the box on page 24), it rarely works for students learning to do and report serious research. Your teachers expect you to report not just *what* you find, but what you can *do* with it.

2.3.2 Help Me Solve My Practical Problem

Imagine that your next meeting is with True-to-Life Films. They plan to make a movie about a zeppelin flight in 1936 and want you to help them get the historical details right, including a scene in the dining cabin. They want to know how the cabin was furnished, what people ate, what the menus looked like, and so on. They don't care whether your facts are new, only whether they are right, so that they can make the scene authentic. You show them your photos and the menu and describe the oysters Great-Uncle Otto ate, but you don't bother with why he took the trip. To succeed in this role, you must help them solve a practical problem whose solution you base not on *all* the data you can find, no matter how new, but on just those *particular* facts that are relevant to the problem of authenticity and whose sources you can show are reliable. Your audience will listen intently and critically, because they want to get the details right.

That's the kind of task you're likely to face if your teacher invents a "real world" assignment—write to an EPA official who needs to *do* something about a polluted lake. Academic researchers sometimes address practical problems like these, but for them another kind of problem is far more common. So pose a practical problem *only if* your teacher creates one; otherwise, check with her first. (We'll discuss practical problems in more detail in chapter 4.)

2.3.3 Help Me Understand Something Better

Now imagine that your audience is the faculty of Zeppo University's Department of Lighter-than-Air Studies. They study all aspects of blimps and zeppelins, do research on their economics and aerodynamics, and participate

in a worldwide conversation about their history and social significance. They compete with other lighter-than-air scholars to produce new lighter-than-air knowledge and theories that they publish in lighter-than-air journals and books read by everyone in their lighter-than-air field.

These scholars have invited you to talk about your specialty: the social history of zeppelin travel in the 1930s. They don't want you just to amuse them with new facts (though they'll be happy if you do) or to help them *do* something (though they'd be pleased if you got them consulting work with True-to-Life Films). They want you to use whatever new facts you have to help them better *understand* the social history of zeppelin travel or, better still, of lighter-than-air culture in general.

Because these lighter-than-air scholars are intensely committed to finding the Truth about zeppelins, you know they expect you to be objective, rigorously logical, and able to examine every issue from all sides. You also know that if you don't nail down your facts, they'll hammer you during the question period and if you don't have good answers, slice you up afterward over the wine and cheese, not just to be contentious or even nasty (though some will be), but to get as close as they can to the Truth about zeppelins in the 1930s. If you offer new data, like Great-Uncle Otto's photos, letter, and menu, they'll be glad to see them, but they'll want to know why they matter and might even question their authenticity.

Above all, they will care about your documents *only if* you can show how they serve as *evidence* that helps you answer a question important to understanding something about zeppelins that is *more important* than your uncle's trip. They will receive you especially well if you can convince them that they do not understand the social history of zeppelins as well as they thought and that your new data will improve their flawed understanding. If you can't do that, they'll respond not with *I don't agree*—we all learn to live with that; some of us even thrive on it—but with a response far more devastating: *I don't care.*

So you begin your talk:

> We all have been led to believe by a number of studies on the food service on transatlantic zeppelin flights in the 1930s (especially Schmidt 1986 and Kloepfer 1998) that items were never cooked over an open flame because of the danger of explosions. However, I have recently discovered a menu from

> the July 12, 1936, crossing of the *Hindenburg* indicating that oysters grilled over charcoal were served. . . . [You then go on to show why that new knowledge matters.]

That is the kind of conversation you join when you report research to a community of scholars. You must imagine them imagining this conversation with you: *Never mind whether your style is graceful (though I will admire your work more if it is); don't bother me with amusing anecdotes about your Great-Uncle Otto (though I like hearing them if they help me understand your ideas better); ignore whether what you know will make me rich (though I would be happy if it did). Just tell me something I don't know so that I can better understand our common interest.*

Who Cares about *That*?

> Academic researchers are often scoffed at for studying esoteric topics that matter to no one but themselves. The charge is usually unfair, but some researchers do become fascinated with matters that seem to have little significance. Williams once attended the dissertation defense of a PhD candidate who had discovered reels and reels of film shot by European anthropologists in Africa and Asia in the early twentieth century. This previously unknown footage fascinated the film scholars on the committee. But when Williams asked the candidate, "How do these new films improve our understanding of movies then or now?" she could answer only that "no one has ever seen this footage before." Williams put his question in different ways but never got a better answer. The film scholars, on the other hand, were untroubled (and found Williams's questions naive), because they were already imagining how the footage might change their thinking about early film. And in any event, they all loved old film for its own sake. So sometimes new data alone are enough to interest the right readers. But if that candidate hopes to write anything that interests anyone but a tiny coterie of specialists, she will have to make an offer better than *Here's some new stuff.*

Your academic readers will almost always adopt this third role. They will think you've fulfilled your side of the social contract only when you treat them as who they think they are: scholars interested in greater knowledge and better understanding. To be sure, the faculty over in chemistry or philosophy care little about zeppelins, much less their meal service. (*Can you believe the trivia they study over in Helium Hall?*) But then you don't much care about their issues, either. You are concerned with your *particular* community of readers, with *their* interests and expectations, with improving *their* understanding, based

on the best evidence you can find. That's the social contract that all researchers must establish with their readers.

Quick Tip: A Checklist for Understanding Your Readers

Think about your readers from the start, knowing that you'll understand them better as you work through your project. Answer these questions early on, then revisit them when you start planning and again when you revise.

- Who will read my paper?
  - Professionals who expect me to follow every academic convention and use a standard format?
  - Well-informed general readers?
  - General readers who know little about the topic?
- What do they expect me to do? Should I
  - entertain them?
  - provide new factual knowledge?
  - help them understand something better?
  - help them do something to solve a practical problem in the world?
- How much can I expect them to know already?
  - What do they know about my topic?
  - Is the problem one that they already recognize?
  - Is it one that they have but haven't yet recognized?
  - Is the problem not theirs, but only mine?
  - Will they take the problem seriously, or must I convince them that it matters?
- How will readers respond to the solution/answer in my main claim?
  - Will it contradict what they already believe? How?
  - Will they make standard arguments against my solution?
  - Will they want to see the steps that led me to the solution?

PART II

Asking Questions, Finding Answers

Prologue

Planning Your Project—An Overview

If you've skimmed this book once, you're ready to begin your project. If you have a research question and know how to look for its answer, review the next two chapters quickly; then read the remaining ones carefully as they become relevant to your task. You may, however, feel bewildered if you're starting from scratch, without even a topic to guide you. But you can manage if you have a plan and take one step at a time.

If you are starting from scratch, your first task is to find a research question worth investigating that will lead to a research problem worth solving. Here are four steps to that end:

Find a topic specific enough to let you master a reasonable amount of information on it in the time you have: not, for example, *the history of scientific writing* but *essays in the* Proceedings of the Royal Society *(1675–1750) as precursors to the modern scientific article*; not *doctors in seventeenth-century drama* but *Molière's mockery of doctors in three early plays*.

Question that topic until you find questions that catch your interest. For example, *How did early Royal Society authors demonstrate that their evidence was reliable?* Or, *Why did Molière mock doctors?*

Determine the kinds of evidence your readers will expect you to offer in support of your answer. Will they accept reports of facts from secondary sources, or will they expect you to consult primary sources (see 5.1.1)?

Will they expect quantitative data, quotations from authorities, or firsthand observations?

Determine whether you can find this evidence. There's no point researching a topic unless you have a good chance of finding the right kind of evidence.

Once you think you have enough data to support at least a plausible answer to your question, you'll be ready to assemble an argument that makes your case (see part III), then to plan, draft, and revise it (see part IV).

You'll discover, however, that you can't march through those steps in the neat order we present them. You'll think of a tentative answer to your research question before you have all the evidence you need to support it. And when you think you have an argument worth making, you may discover that you need more and maybe different evidence from new sources. You may even modify your topic. Doing research is not like strolling along an easy, well-marked path to a familiar destination; it's more like zigzagging up and down a rocky hill through overgrown woods, sometimes in a fog, searching for something you won't recognize until you see it. But no matter how indirect your path, you can make progress if at each step of the way you plan for predictable detours (and maybe even avoid some of them).

What Is Your Evidence?

No matter their field, researchers collect information to use as evidence to support their claims. But researchers in different fields call that information by different names. We call it *data*. By *data* we mean not just the numbers that natural and social scientists collect, but anything you find "out there" relevant to answering your research question. The term is used less often by researchers in the humanities, but they, too, gather data in the form of quotations, historical facts, and so on. Data are inert, however, until you use them to support a claim that answers your research question. At that point, your data become *evidence*. If you don't have more data than you can use as evidence, you haven't collected enough. (Incidentally, *data* is plural; a single bit of data is a *datum.*)

Resolve to do lots of writing along the way. Much of it will be routine note-taking, but you should also write reflectively, to understand: make outlines; explain why you disagree with a source; draw diagrams to connect disparate facts; summarize sources, positions, and schools; record even random thoughts. Many researchers find it useful to keep a journal for hunches, new ideas, random thoughts, problems, and so on. You might not include much of this writing-to-discover-and-understand in your final draft. But when you *write as you go*, *every day*, you encourage your own best critical thinking, understand your sources better, and, when the time comes, draft more productively.

Quick Tip: Creating a Writing Group

A downside of academic research is its isolation. Except for group projects, you'll read and write mostly alone. But it doesn't have to be that way. Look for someone other than your instructor or adviser who will talk with you about your progress, review your drafts, even pester you about how much you've written. That might be a generous friend, but even better is another writer so that you can comment on each other's ideas and drafts.

Best of all is a group of four or five people working on their own projects who meet regularly to read and discuss one another's work. Early on, each meeting should start with a summary of each person's project in this three-part sentence: *I'm working on X because I want to find out Y, so that I (and you) can better understand Z* (more about this in 3.4). As your projects advance, develop an opening "elevator story," a short summary of your project that you could give someone on the way to a meeting. It should include your research question, your best guess at an answer, and the kind of evidence you expect to use to support it. The group can then follow up with questions, responses, and suggestions.

Don't limit your talk to just your story, however. Talk about your readers: Why should they be interested in your question? How might they respond to your argument? Will they trust your evidence? Will they have other evidence in mind? Such questions help you plan an argument that anticipates what your readers expect. Your group can even help you brainstorm when you bog down. Later the group can read one another's outlines and drafts to imagine how their final readers will respond. If your group has a problem with your draft, so will those readers. But for most writers, a writing group is most valuable for the discipline it imposes. It is easier to meet a schedule when you know you must report to others.

Writing groups are common for those writing theses or dissertations. But the rules differ for a class paper. Some teachers think that a group or writing partner provides more help than is appropriate, so be clear what your instructor allows.

3 From Topics to Questions

> In this chapter, we discuss how to find a topic among your interests, refine it to a manageable scope, then question it to find the makings of a problem that can guide your research. If you are an experienced researcher or know the topic you want to pursue, skip to chapter 4. But if you are starting your first project, you will find this chapter useful.

If you are new to research, the freedom to pick your own topic can seem daunting. Where do you begin? How do you tell a good topic from a bad one? Inexperienced researchers typically wonder, *Will I find enough information on this topic to write about it?* To their surprise they often compile too much information, much of it not very useful. They do so because their topic lacks focus. Without that focus, any evidence you assemble risks appearing to your readers as little more than a mound of random facts. As you begin a research project, you will want to distinguish a topic from a subject. A subject is a broad area of knowledge (e.g., climate change), while a topic is a specific interest within that area (e.g., the effect of climate change on migratory birds). However, finding a topic is not simply a matter of narrowing your subject. A topic is an approach to a subject, one that asks a *question* whose answer solves a *problem* that your readers care about.

In all research communities, some questions are “in the air,” widely debated and researched, such as whether traits like shyness or an attraction to risk are learned or genetically inherited. But other questions may intrigue only the researcher: *Why do cats rub their faces against us? Why does a coffee spill dry up in the shape of a ring?* That’s how a lot of research begins —not with a big question that attracts everyone in a field, but with a mental itch about a small question that only a single researcher wants to scratch. If you feel that itch, start scratching. But at some point, you must decide whether the answer to your question solves a problem significant to some community of researchers or even to a public whose lives your research could change.

> **Question or Problem?**
>
> You may have noticed that we’ve been using the words *question* and
>
> *problem* almost interchangeably. But they are not quite the same. Some questions raise problems; others do not. A question raises a problem if not answering it keeps us from knowing something more important than its answer. For example, if we cannot answer the question *Are there ultimate particles?*, we cannot know

something even more important: the nature of physical existence. On the other hand, a question does not raise a problem if not answering it has no apparent consequences. For example, *Was Abraham Lincoln's right thumb longer than his nose?* We cannot think of what we would gain by knowing. At least at the moment.

Now, that word *problem* is itself a problem. Commonly, a problem means trouble, but among researchers it has a meaning so special that we devote the next chapter to it. But before you can frame your research problem, you have to find a topic that might lead to one. So we'll start there, with finding a topic.

3.1 FROM AN INTEREST TO A TOPIC

Most of us have more than enough interests, but beginners often find it hard to locate among theirs a topic focused enough to support a substantial research project. They may also believe they lack the expertise for the project. However, a research topic is an interest stated specifically enough for you to imagine *becoming* a local expert on it. That doesn't mean you already know a lot about it or that you'll have to know more about it than others, including your teacher. You just want to know a lot more about it than you do now.

If you can work on any topic, we offer only a cliché: start with what most interests you. Nothing contributes to the quality of your work more than your commitment to it. But also ask yourself: *What interests me about this topic? What would interest others?*

3.1.1 Finding a Topic in a Writing Course

Start by listing as many interests as you can that you'd like to explore. Don't limit yourself to what you think might interest a teacher or make you look like a serious student. Let your ideas flow. Prime the pump by asking friends, classmates, even your teacher about topics that interest them. If no good topics come to mind, consult the Quick Tip at the end of this chapter.

Once you have a list of topics, choose the one or two that interest you most and explore their research potential. Do this:

In the library, look up your topic in a general guide such as *CQ Researcher* and skim the subheadings. In an online database such as Academic Search Premier, you can explore your topic through subject terms. If you have a more narrow focus, you can do the same with specialized guides such as *Women's Studies*

International. While some libraries will have copies of general and specialized guides on the shelf, most now subscribe to their online equivalents, but not all of them let you skim subject headings. (We discuss these resources in chapter 5 and list several in the appendix.)

On the Internet, Google your topic, but don't surf indiscriminately. Look first for websites that are roughly like sources you would find in a library, such as online encyclopedias. Read the entry on your general topic, and then copy the list of references at the end for a closer look. Use *Wikipedia*

to find ideas and sources, but always confirm what you find there in a reliable source. Few experienced researchers trust *Wikipedia*, so *under no circumstances cite it as a source of evidence* (unless your topic is *Wikipedia* itself).

Remember, at this point you are exploring a topic to spur your thinking and to see if that topic is viable. With that in mind, you can also find ideas in blogs, which discuss almost every contentious issue. Since most issues are usually too big for a research paper, look for posts that take a position on narrow aspects of larger issues. If you disagree with a view, investigate it.

3.1.2 Finding a Topic for a First Research Project in a Particular Field

Start by listing topics relevant to your particular class *and* that interest you, then narrow them to one or two promising ones. If the topic is general, such as *religious masks*, you'll have to do some random reading to narrow it. But read with a plan:

Skim encyclopedia entries in your library or online. Start with standard ones such as the *Encyclopaedia Britannica*. Then consult specialized ones such as the *Encyclopedia of Religion* or the *Stanford Encyclopedia of Philosophy*.

Skim headings in specialized indexes such as the *Philosopher's Index*, *Psychological Abstracts*, or *Women's Studies Abstracts.* Use subheadings for ideas of how others have narrowed your topic.

Google your topic, but not indiscriminately. Use Google Scholar, a search engine that focuses on scholarly journals and books. Skim the articles it turns up, especially their lists of sources.

When you know the general outline of your topic and how others have narrowed theirs, try to narrow yours. If you can't, browse through journals and websites until your topic becomes more clearly defined. That takes time, so start early.

3.1.3 Finding a Topic for an Advanced Project

Most advanced students already have interests in topics relevant to their field. Often topics find them as they become immersed in a field. If that is not yet the case, focus on what interests you, but remember that you must eventually show why it should also interest others.

Find what interests other researchers. Look online for recurring issues and debates in the archives of professional discussion lists relevant to your interests. Search online and in journals like the *Chronicle of Higher Education* for conference announcements, conference programs, calls for papers, anything that reflects what others find interesting.

Skim the latest issues of journals in your field, not just for articles, but also for conference announcements, calls for papers, and reviews. Skim recent articles in your library's online databases in your field (e.g., the MLA International Bibliography).

Investigate the resources that your library is particularly rich in. If, for example, it (or a library nearby) holds a collection of rare papers on an interesting topic, you have found not only a topic but a way into it. Many unexpected finds await discovery in your library's archives.

3.2 FROM A BROAD TOPIC TO A FOCUSED ONE

The most useful way to think about a topic is as a starting place for your research. (The word "topic" comes from *topos,* which is Greek for "place.") From this starting place, you can head off in a particular direction and thus narrow an overly broad topic into a productively focused one. At this point, your biggest risk is settling on a topic so broad that it could be a subheading in a library catalog: *spaceflight*; *Shakespeare's problem plays*; *natural law*. A topic is probably too broad if you can state it in four or five words:

Free will in Tolstoy

The history of commercial aviation

A topic so broad can intimidate you with the task of finding, much less reading, even a fraction of the sources available. So narrow it down:

We narrowed those topics by adding words and phrases, but of a special kind: *conflict*, *description*, *contribution*, and *developing*. Those nouns are derived from verbs expressing actions or relationships: *to conflict*, *to describe*, *to contribute*, and *to develop*. Lacking such "action" words, your topic is a static thing.

Note what happens when we restate static topics as full sentences. Topics

and (2) change almost not at all:

Free will in Tolstoy$_{topic}$ → There is free will in Tolstoy's novels.$_{claim}$

The history of commercial aviation$_{topic}$ → Commercial aviation has a history.$_{claim}$

In reality, (1) and (2) are not topics at all because they do not lead anywhere. But when (3) and (4) are revised into full sentences, they are closer to claims that a reader might find interesting.

The *conflict* of free will and inevitability in Tolstoy's *description* of three battles in *War and Peace*$_{topic}$ → In *War and Peace*, Tolstoy *describes* three battles in which free will and inevitability *conflict*.$_{claim}$

The *contribution* of the military in *developing* the DC-3 in the early years of commercial aviation$_{topic}$ → In the early years of commercial aviation, the military *contributed* to the way the DC-3 *developed*.$_{claim}$

Such claims may at first seem thin, but you'll make them richer as you work through your project. And that's the point: these topics are actually paths to pursue when devising your project.

Caution: Don't narrow your topic so much that you can't find information on it. Too much information is available on *the history of commercial aviation* but too little (at least for beginning researchers) on *the decision to lengthen the wingtips on the DC-3 prototype for military use as a cargo carrier.*

3.3 FROM A FOCUSED TOPIC TO QUESTIONS

Once they have a focused topic, many new researchers make a beginner's mistake: they immediately start plowing through all the sources they can find on the topic, taking notes on everything they read. With a promising topic such as *the political origins of legends about the Battle of the Alamo*, they mound up endless facts connected with the battle: what led up to it, histories of the Texas Revolution, the floor plan of the mission, even biographies of generals Santa Anna and Sam Houston. They accumulate notes, summaries, descriptions of differences and similarities, ways in which the stories conflict with one another and with what historians think really happened, and so on. Then they dump it all into a paper that concludes, *Thus we see many differences and similarities between* . . .

Many high school teachers would reward such a paper with a good grade, because it shows that the writer can focus on a topic, find information on it, and assemble that information into a report, no small achievement—for a first project. But in *any* college course, such a report falls short if it is seen as just a pastiche of vaguely related facts. If a writer asks no specific *question* worth asking, he can offer no specific *answer* worth supporting. And without an answer to support, he cannot *select* from all the data he could find on a topic just those relevant to his answer. To be sure, those fascinated by Elvis Presley movie posters or the first generation of video games will read *anything* new about them, no matter how trivial. Serious researchers, however, do not document information for its own sake, but to support the answer to a question that they (and they hope their readers) think is worth asking.

So the best way to begin working on your focused topic is not to find all the information you can on it, but to formulate questions that direct you to just that information you need to answer them.

Start with the standard journalistic questions: *who*, *what*, *when*, and *where*, but focus on *how* and *why*. To engage your best critical thinking, systematically ask questions about your topic's history, composition, and categories. Then ask any other question you can think of or find in your sources. Record all the questions, but don't stop to answer them even when one or two grab your attention. This inventory of possible questions will help to direct your search activities and enable you to make sense of information

you find. (Don't worry about keeping these categories straight; their only purpose is to stimulate questions and organize your answers.) Let's take up the example of masks mentioned earlier.

3.3.1 Ask about the History of Your Topic

How does it fit into a **larger developmental context**? Why did your topic come into being? *What came before masks? How were masks invented? Why? What might come after masks?*

What is its own **internal history**? How and why has the topic itself changed through time? *How have Native American masks changed? Why? How have Halloween masks changed? How has the role of masks in society changed? How has the booming market for kachina masks influenced traditional design? Why have masks helped make Halloween the biggest American holiday after Christmas?*

3.3.2 Ask about Its Structure and Composition

How does your topic fit into the **context of a larger structure or function as part of a larger system**? *How do masks reflect the values of different societies and cultures? What roles do masks play in Hopi dances? In scary movies? In masquerade parties? How are masks used other than for disguise?*

How do its parts **fit together as a system**? *What parts of a mask are most significant in Hopi ceremonies? Why? Why do some masks cover only the eyes? Why do few masks cover just the bottom half of the face? How do their colors play a role in their function?*

3.3.3 Ask How Your Topic Is Categorized

How can your topic be **grouped into kinds**? *What are the different kinds of masks? Of Halloween masks? Of African masks? How are they categorized by appearance? By use? By geography or society? What are the different qualities of masks?*

How does your topic **compare to and contrast with** others like it? *How do Native American ceremonial masks differ from those in Japan? How do Halloween masks compare with Mardi Gras masks?*

3.3.4 Turn Positive Questions into Negative Ones

Why have masks not *become a part of other holidays, like Presidents'*

Day or Memorial Day? How do Native American masks not *differ from those in Africa? What parts of masks are typically* not *significant in religious ceremonies?*

3.3.5 Ask *What If?* and Other Speculative Questions

How would things be different if your topic never existed, disappeared, or were put into a new context? *What if no one ever wore masks except for safety? What if everyone wore masks in public? What if it were customary to wear masks on blind dates? In marriage ceremonies? At funerals? Why are masks common in African religions but not in Western ones? Why don't hunters in camouflage wear masks? How are masks and cosmetic surgery alike?*

3.3.6 Ask Questions Suggested by Your Sources

You won't be able to do this until you've done some reading on your topic.

Ask questions that **build on agreement**:

If a source makes a claim you think is persuasive, ask questions that might extend its reach. *Elias shows that masked balls became popular in eighteenth-century London in response to anxieties about social mobility. Did the same anxieties cause similar developments in Venice?*

Ask questions that might support the same claim with new evidence. *Elias supports his claim about masked balls with published sources. Is it also supported by letters and diaries?*

Ask questions analogous to those that sources have asked about similar topics. *Smith analyzes costumes from an economic point of view. What would an economic analysis of masks turn up?*

Now ask questions that reflect **disagreement**:

Martinez claims that carnival masks uniquely allow wearers to escape social norms. But could there be a larger pattern of all masks creating a sense of alternative forms of social or spiritual life?

(We discuss in more detail how to use disagreements with sources in 6.4.) If you are an experienced researcher, look for questions that other

researchers ask but don't answer. Many journal articles end with a paragraph or two about open questions, ideas for more research, and so on (see 4.3.2 for an example). You might not be able to do all the research they suggest, but

you might carve out a piece of it. You can also look for Internet discussions on your topic, then "lurk," just reading the exchanges to understand the kinds of questions those on the list debate. Record questions that spark your interest. You can also post questions to the list if they are specific and narrowly focused.

3.3.7 Evaluate Your Questions

After asking all the questions you can think of, evaluate them, because not all questions are equally good. Look for questions whose answers might make you (and, ideally, your readers) think about your topic in a new way. Avoid questions like these:

> Their answers are settled fact that you could just look up. *Do the Inuit use masks in their wedding ceremonies?* Questions that ask *how* and *why* invite deeper thinking than *who, what, when*, or *where*, and deeper thinking leads to more interesting answers.
>
> Their answers would be merely speculative. *Would church services be as well attended if the congregation all wore masks?* If you can't imagine finding hard data that might settle the question, it's a question you can't settle.
>
> Their answers are dead ends. *How many black cats slept in the Alamo the night before the battle?* It is hard to see how an answer would help us think about any larger issue worth understanding better, so it's a question that's probably not worth asking.

You might, however, be wrong about that. Some questions that seemed trivial, even silly, have answers more significant than expected. One researcher wondered why a coffee spill dries up in the form of a ring and discovered things about the properties of fluids that others in his field thought important—and that paint manufacturers found valuable. So who knows where a question about cats in the Alamo might take you? You can't know until you get there.

Once you have a few promising questions, try to combine them into larger ones. For example, many questions about the Alamo story ask about the interests of the storytellers

and their effects on their stories: *How have politicians used the story? How have the storytellers' motives changed? Whose purposes does each story serve?* These can be combined into a single question:

> *How and why have users of the Alamo story given the event a mythic quality?*

A question like this gives direction to your research (and helps avoid the gathering of endless information). And it begins to imagine readers who will judge whether your question is significant.

3.4 THE MOST SIGNIFICANT QUESTION: *SO WHAT?*

Even if you are an experienced researcher, you might not be able to take the next step until you are well into your project, and if you are a beginner, you may find it frustrating. Even so, once you have a question that holds your interest, you must pose a tougher one about it: *So what?* Beyond your own interest in its answer, why would others think it a question worth asking? You might not be able to answer that *So what?* question early on, but it's one you have to start thinking about, because it forces you to look beyond your own interests to consider how your work might strike others.

Think of it like this: What will be lost if you *don't* answer your question? How will *not* answering it keep us from understanding something else better than we do? Start by asking *So what?* at first of yourself:

> So what if I don't know or understand how butterflies know where to go in the winter, or how fifteenth-century musicians tuned their instruments, or why the Alamo story has become a myth? So what if I can't answer my question? What do we lose?

Your answer might be *Nothing. I just want to know*. Good enough to start, but not to finish, because eventually your readers will ask as well, and they will want an answer beyond *Just curious.* Answering *So what?* vexes all researchers, beginners and experienced alike, because when you have only a question, it's hard to predict whether others will think its answer is significant. But you must work toward that answer throughout your project. You can do that in three steps.

3.4.1 Step 1: Name Your Topic

If you are beginning a project with only a topic and maybe the glimmerings of a good question or two, start by naming your project:

I am trying to learn about/working on/studying _____.

Fill in the blank with your topic, using some of those nouns derived from verbs:

I am studying the *causes* of the *disappearance* of large North American mammals . . .

I am working on Lincoln's *beliefs* about *predestination* and their *influence* on his *reasoning* . . .

3.4.2 Step 2: Add an Indirect Question

Add an indirect question that indicates what you do not know or understand about your topic:

I am studying/working on _____

because I want to find out who/what/when/where/whether/why/how _____.

I am studying the causes of the disappearance of large North American mammals **because I want to find out whether they were hunted to extinction . . .**

I am working on Lincoln's beliefs about predestination and its influence on his reasoning **because I want to find out how his belief in destiny influenced his understanding of the causes of the Civil War . . .**

When you add that *because I want to find out how/why/whether* clause, you state why *you* are pursuing your topic: to answer a question important to you. If you are a new researcher and get this far, congratulate yourself, because you have moved beyond the aimless collection of data. But now, if you can, take one step more. It's one that advanced researchers know they must take, because they know their work will be judged not by its

significance to them but by its significance to others in their field. They must have an answer to *So* what?

3.4.3 Step 3: Answer *So What?* by Motivating Your Question

This step tells you whether your question might interest not just you but others. To do that, add a second indirect question that explains why you asked your first question. Introduce this second implied question with *in order to help my reader understand how, why, or whether*:

> I am studying the causes of the disappearance of large North American mammals
>
> because I want to find out whether the earliest peoples hunted them to extinction,
>
> **in order to help my reader understand whether native peoples lived in harmony with nature or helped destroy it.**
>
> I am working on Lincoln's beliefs about predestination and their influence on his reasoning
>
> because I want to find out how his belief in destiny and God's will influenced his understanding of the causes of the Civil War,
>
> **in order to help my reader understand how his religious beliefs may have influenced his military decisions.**

It is the indirect question in step 3 that you hope will seize your readers' interest. If it touches on issues important to your field, even indirectly, then your readers should care about its answer.

Some advanced researchers begin with questions that others in their field already care about: *Why did the giant sloth and woolly mammoth disappear from North America?* Or: *Is risk taking genetically based?* But many researchers, including at times the five of us, find that they can't flesh out the last step in that three-part sentence until they finish a first draft. So you make no mistake *beginning* your research without a good answer to that third question—*Why does this matter?*—but you face a problem when you *finish* your research without having thought through those three steps at all. And if you are doing advanced

research, you *must* take that step, because answering that last question is your ticket into the conversation of your community of researchers.

Regularly test your progress by asking a roommate, relative, or friend to force you to flesh out those three steps. Even if you can't take them all confidently, you'll know where you are and where you still have to go. To summarize: Your aim is to explain

what you are writing about—*I am working on the topic of . . .*

what you don't know about it—*because I want to find out . . .*

why you want your reader to know and care about it—*in order to help my reader understand better . . .*

In the following chapters, we return to those three steps and their implied questions, because they are crucial not just for finding questions but for framing the research problem that you want your readers to value.

Quick Tip: Finding Topics

If you are a beginner, start with our suggestions about exploring the Internet and skimming bibliographical guides (see 3.1). If you still draw a blank, try these steps.

FOR GENERAL INTEREST TOPICS

What special interest do you have—sailing, chess, finches, old comic books? The less common, the better. Investigate something about it you don't know: its origins, its technology, how it is practiced in another culture, and so on.

Where would you like to travel? Surf the Internet, finding out all you can about your destination. What particular aspect surprises you or makes you want to know more?

Wander through a museum with exhibitions that appeal to you— artworks, dinosaurs, old cars. If you can't browse in person, browse a "virtual museum" on the Internet. Stop when something catches your interest. What more do you want to know about it?

Wander through a shopping mall or store, asking yourself, *How do they make that?* Or, *I wonder who thought up that product?*

Leaf through a Sunday newspaper, especially its features sections. Skim reviews of books or movies, in newspapers or on the Internet.

Browse a large magazine rack. Look for trade magazines or those that cater to specialized interests. Investigate whatever catches your interest.

Tune into talk radio or interview programs on TV until you hear a claim that you disagree with. Or find something to disagree with on the websites connected with well-known talk shows. See whether you can make a case to refute it.

Use an Internet search engine to find websites related to your topic. These include blogs maintained by individuals and organizations. You'll get hundreds of hits, but look only at the ones that surprise you.

Is there a common belief that you suspect is simplistic or just wrong? A common practice that you find pointless or irritating? Do research to make a case against it.

What courses will you take in the future? What research would help you prepare for them?

FOR TOPICS FOCUSED ON A PARTICULAR FIELD

If you have experience in your field, review 3.1.2–3.

Browse through a textbook of a course that is one level beyond yours or a course that you know you will have to take. Look especially hard at the study questions.

Attend a lecture for an advanced class in your field, and listen for something you disagree with, don't understand, or want to know more about.

Ask your instructor about the most contested issues in your field.

Find an Internet discussion list in your field. Browse its archives, looking for matters of controversy or uncertainty.

Surf the websites of departments at major universities, including class sites. Also check websites of museums, national associations, and government agencies, if they seem relevant.

4 From Questions to a Problem

In this chapter, we explain how to turn a question into a problem that readers think is worth solving. If you are an advanced researcher, you know how essential this step is. If you are new to research, we hope to convince you of its importance, because what you learn here will be essential to all your future projects.

In the last chapter, we suggested that you can identify the significance of your research question by fleshing out this three-step formula:

Topic: I am studying _____

Question: because I want to find out what/why/how _____,

Significance: in order to help my reader understand _____.

These steps describe not only the development of your project but your own development as a researcher.

When you move from step 1 to 2, you are no longer a mere data collector but a researcher interested in understanding something better.

When you then move from step 2 to 3, you focus on why that understanding is *significant*.

That significance might at first be just for yourself, but you join a community of researchers when you can state that significance *from your readers' point of view*. In so doing, you create a stronger relationship with readers because you promise something in return for their interest in your report—a deeper understanding of something that matters to *them*. At that point, you have posed a *problem* that they recognize needs a solution.

4.1 UNDERSTANDING RESEARCH PROBLEMS

Too many researchers at all levels write as if their task is to answer a question that interests themselves alone. That's wrong: to make your research matter, you must address a problem that others in your community—your readers— also want to solve. To understand why, you have to understand what research problems look like. And to do that, you have to understand two other kinds of problems, what we'll call practical problems and conceptual problems.

4.1.1 Practical Problems: What Should We Do?

Everyday research usually begins not with dreaming up a topic to think about but with a practical problem that if you ignore it means trouble. When its solution is not obvious, you have to find out how to solve it. To do that, you must pose and solve a problem of another kind, a *research* problem defined by what you *do not know or understand* about your practical problem.

It's a familiar task that typically looks like this:

PRACTICAL PROBLEM: The chain on my bicycle broke.

RESEARCH PROBLEM: Can I find a bike shop that will replace it?

RESEARCH SOLUTION: Here it is: Cycle Source, 1401 East 55th Street.

PRACTICAL SOLUTION: Walk over to get my bike fixed.

Problems like that are in essence no different from more complicated ones.

> The National Rifle Association is lobbying me to oppose gun control. *How many votes do I lose if I refuse?* Do a survey. *Most of my constituents support gun control.* I can reject the request.
>
> Costs are up at the Omaha plant. *What changed?* Hire a consulting firm to figure it out. *Increase in turnover.* If we improve training and morale, our workers will stick with us.

Put in general terms, a *practical* problem is caused by some condition in the world (from spam to losing money in Omaha to terrorism) that troubles us because it costs us time, money, respect, security, opportunity, even our lives. We solve a practical problem by

doing something (or by encouraging others to do something) to eliminate or at least mitigate the condition creating these tangible costs.

But to know what to do, someone first has to *understand* something better. That politician being lobbied by the NRA, for example, needs to know how his constituents feel about gun control so he can decide where he stands; the managers of the Omaha plant need to know the cause of their increasing costs so they can address it.

4.1.2 Conceptual Problems: What Should We Think?

That need for knowledge or understanding raises a conceptual problem. In research, a *conceptual* problem arises when we do not understand something about the world as well as we would like. We solve a conceptual problem not by doing something to change the world but by answering a question that helps us understand it better.

We usually answer these questions through research, which is why conceptual problems are also called research problems: the word *conceptual* describes their condition and costs or consequences; the word *research* refers to how we solve them. Graphically, the relationship between practical and conceptual or research problems looks like this:

The term *problem* thus has a special meaning in the world of research, one that sometimes confuses beginners. In our everyday world, a problem is

something we try to avoid. But in academic research, a problem is something we seek out, even invent if we have to. Indeed, a researcher without a good conceptual or research problem to work on faces a bad practical problem because without one a researcher is out of work.

Inexperienced researchers sometimes struggle with these notions because experienced researchers often talk about their work in shorthand. When asked what they are working on, they often answer with what sounds like one of those general topics we warned you about: *adult measles*, *mating calls of Wyoming elk*, *zeppelins in the 1930s.* As a result, beginners sometimes think that having a topic to read about is the same as having a problem to solve.

When they do, they create a big practical problem for themselves, because with only a topic to guide their work, they gather data aimlessly and endlessly. Without a specific question to answer, they have no way of knowing when they have enough. When they write, they struggle to decide what to include, usually throwing in everything just to be on the safe side. So it's not surprising that they feel frustrated when a reader says, *I don't see the point here; this is just a data dump.*

To avoid that judgment, you need a problem that focuses you on finding just those data that will help you solve it. It might take a while to figure out what that problem is, but from the outset you have to think about it. That begins with understanding how conceptual problems work.

4.2 UNDERSTANDING THE COMMON STRUCTURE OF PROBLEMS

Practical problems and conceptual problems have the same two-part structure:

> a situation or *condition*, and undesirable *consequences* caused by that condition,
> *costs* that you (or, better, your readers) don't want to pay

What distinguishes them is the nature of those conditions and costs.

4.2.1 The Nature of Practical Problems

Consider a flat tire. Ordinarily, it would be a practical problem, because it is

a condition in the world (the flat) that imposes (2) a tangible cost that you don't want to pay, like missing a dinner date. But suppose you were bullied into the date and would rather be anywhere else. In that case, the benefit of the flat is more than its cost, so the flat is not a problem but a solution to the bigger problem of an evening spent with someone you don't like. Low cost, big benefit, no problem.

On the other hand, suppose the police set up a sting in which they lure criminals out of hiding by announcing that they have won the lottery. Ordinarily, winning the lottery is not a problem, but here it is, because it has a tangible cost: arrest.

A practical problem has two parts: a condition, which can be anything that imposes intolerable costs, and those costs. To state a practical problem so that others understand it clearly, you must describe both of its parts.

Its **condition**:

I missed the bus.

The ozone layer is thinning

The **costs** of that condition that you (or your reader) don't like: I'll be late for work and lose my job.

Many will die from skin cancer.

But a caution: When you write, readers judge the significance of your problem not by the cost *you* pay, but by the cost *they* pay if you don't solve it. So what *you* think is a problem they might not. To make your problem their problem, you must frame it from

their point of view, so that they see its costs to *them*. To do that, imagine that when you pose the condition part of your problem, your reader responds, *So what?*

The ozone layer is thinning.

So what?

You answer with the cost of the problem:

A thinner ozone layer exposes us to more ultraviolet light.

Suppose he again asks, *So what?*, and you respond with the cost of more ultraviolet light:

Too much ultraviolet light can cause skin cancer.

If, however improbably, he again asks, *So what?*, you have failed to convince him that *he* has a problem. We acknowledge a problem only when we stop asking *So what?* and say, instead, *What do we do about it?*

Practical problems like cancer are easy to grasp because they are concrete: when someone has cancer, we don't ask, *So what?* In academic research, however, your problems will usually be conceptual ones, which are harder to grasp because both their conditions and costs are abstract.

4.2.2 The Nature of Conceptual Problems

Practical and conceptual problems have the same two-part structure, but they have different kinds of conditions and costs.

> The condition of a practical problem can be *any* state of affairs that has a tangible cost for you or, better, for your readers.
>
> The condition of a conceptual problem, however, is *always* some version of not knowing or not understanding something.

You can identify the condition of a conceptual problem by completing that three-step sentence (see 3.4): The first step is *I am studying/working on the topic of* _____. In the second step, the indirect question states the condition of a conceptual problem, what you do not know or understand:

I am studying stories of the Alamo, because I want to understand **why voters responded to them in ways that served the interests of Texas politicians.**

That's why we emphasize the value of questions: they force you to state what you don't know or understand but want to.

The two kinds of problems also have two different kinds of costs.

The **cost** of a practical problem is always some tangible thing or situation we don't like.

A conceptual problem does not have such a tangible cost. In fact, we'll emphasize this difference by calling the cost of a conceptual problem its *consequence.*

The **consequence** of a conceptual problem is a particular kind of ignorance: it is a lack of understanding that keeps us from understanding something else even more significant. Put another way, because we haven't answered one question, we can't answer another that is more important.

Researchers often choose projects simply because they are curious. In fact, that's how most of us first become interested in the subjects we study. But to make your research matter to others, you have to say more than *Here is something I find interesting*. You have to show them how solving your problem helps them solve theirs. You do that by explaining your problem's consequence.

You express a problem's consequence in the indirect question in step 3 of our formula:

I am studying stories of the Alamo, because I want to understand why voters responded to them in ways that served the interests of local Texas politicians, in order to help readers understand the bigger and more important question **of how regional self-images influence national politics.**

All of this may sound confusing, but it's simpler than it seems. The condition and the consequence of a conceptual problem are questions that relate to each other in two ways:

The answer to the first question (Q1) helps you answer the second (Q2).

The answer to the second question (Q2) is more important than the answer to the first (Q1).

Here it is again: The first part of a conceptual or research problem is something you don't know but want to. You can phrase that gap in knowledge or understanding as a direct question: *How have romantic movies changed in the last fifty years?* Or as an indirect question: *I want to find out how romantic movies have changed in the last fifty years.*

Now imagine someone asking, *So what if you can't answer that question?* You answer by stating *something else more important* that you can't know until you answer the first question. For example:

> If we can't answer the question of how romantic movies have changed in the last fifty years,*condition/first question* **then we can't answer a more**
>
> **important question: How have our cultural depictions of romantic love changed?***consequence/larger, more important second question*

If you think that it's important to answer that second question, you've stated a consequence that makes your problem worth pursuing, and if your readers agree, you're in business.

But what if you imagine a reader again asking, *So what if I don't know whether we depict romantic love differently than we did?* You have to pose a yet larger question that you hope your readers will think is significant:

> If we can't answer the question of how our depictions of romantic love have changed,*second question* **then we can't answer an even more important**
>
> **one: How does our culture shape the expectations of young men and women about marriage and families?***consequence/larger, more important question*

If you imagine that reader again asking, *So what?*, you might think, *Wrong audience.* But if that's the audience you're stuck with, you just have to try again: *Well, if we don't answer that question, we can't . . .*

Those outside an academic field often think that its specialists ask ridiculously trivial questions: *How did hopscotch originate?* But they fail to realize that researchers want to answer a question like that so that they can answer a second, more important one. For those who care about the way folk games influence the social development of children, the

conceptual consequences of not knowing justifies the research. *If we can discover how children's folk games originate, we can better understand how games socialize children, and, before you ask, once we know that, we can better understand . . .*

4.2.3 Distinguishing "Pure" and "Applied" Research

We call research *pure* when it addresses a conceptual problem that does not bear directly on any practical situation in the world, when it only improves the understanding of a community of researchers. We call research *applied* when it addresses a conceptual problem that does have practical consequences. You can tell whether research is pure or applied by looking at the last of the three steps defining your project. Does it refer to knowing or doing?

Topic: I am studying the electromagnetic radiation in a section of the universe

Question: because I want to find out how many galaxies are in the sky,

Significance: in order to help readers *understand* whether the universe will expand forever or eventually collapse into a point.

That is pure research, because step 3 refers only to understanding. In applied research, the second step still refers to *knowing* or

understanding, but that third step refers to *doing*:

Topic: I am studying how readings from the Hubble telescope differ from readings for the same stars measured by earthbound telescopes

Question: because I want to find out how much the atmosphere distorts measurements of electromagnetic radiation,

Practical Significance: so that astronomers can use data from earthbound telescopes *to measure* more accurately the density of electromagnetic radiation.

That problem calls for applied research because only when astronomers *know* how to account for atmospheric distortion can they *do* what they want to— measure light more accurately.

4.2.4 Connecting Research to Practical Consequences

Some inexperienced researchers are uneasy with pure research because the consequence of a conceptual problem—merely not knowing something—is so abstract. Since they are not yet part of a community that cares deeply about understanding its part of the world, they feel that their findings aren't good for much. So they try to cobble a practical cost onto a conceptual question to make it seem more significant:

> **Topic:** I am studying differences among nineteenth-century versions of the Alamo story
>
> **Research Question:** because I want to find out how politicians used stories of such events to shape public opinion,
>
> **Potential Practical Significance:** in order to protect ourselves from unscrupulous politicians.

Most readers would think that the link between steps 2 and 3 is a bit of a stretch.

To formulate a good applied research project, you have to show that the answer to the indirect question in step 2 *plausibly* helps answer the indirect question in step 3. Ask this question:

> If my readers want to achieve the goal of _____ [state your objective from step 3],
> would they think that they could do it if they found out _____? [state your question from step 2]

Try that test on this applied astronomy problem:

> If my readers want to use data from earthbound telescopes to measure more accurately the density of electromagnetic radiation,
> would they think that they could if they knew how much the atmosphere distorts measurements?

The answer would seem to be *Yes.*

Now try the test on the Alamo problem:

> If my readers want to protect themselves from unscrupulous politicians,

would they think they could if they knew how nineteenth-century politicians used stories about the Alamo to shape public opinion?

The answer would probably be *No*. We may see a connection, but it's a stretch.

If you think that the solution to your conceptual problem *might* apply to a practical one, formulate your project as pure research, then *add* your application as a *fourth* step:

Topic: I am studying how nineteenth-century versions of the Alamo story differ

Conceptual Question: because I want to find out how politicians used stories of great events to shape public opinion,

Conceptual Significance: in order to help readers understand how politicians use popular culture to advance their political goals,

Potential Practical Application: so that readers *might* better protect themselves from unscrupulous politicians.

When you state your problem in your introduction, however, present it as a purely conceptual research problem whose significance is in its conceptual consequences. Then wait until your conclusion to suggest its practical application. (For more on this, see chapter 16.)

Most research projects in the humanities and many in the natural and social sciences have no direct application to daily life. But as the term *pure* suggests, many researchers value such research more than they do applied research. They believe that the pursuit of knowledge "for its own sake" reflects humanity's highest calling: to know more, not for the sake of money or power, but for the transcendental good of greater understanding and a richer life of the mind.

As you may have guessed, we are deeply committed to pure research, but also to applied—so long as the research is done well and is not corrupted by malign motives. For example, the potential for profit might compromise the integrity of both pure and applied research in the biological sciences, because it can influence not only what problems some researchers choose to address but also their solutions: *Tell us what to look for, and we'll provide it!* Such situations raise ethical questions that we touch on in our afterword, "The Ethics of Research."

4.3 FINDING A GOOD RESEARCH PROBLEM

What distinguishes great researchers from the rest of us is the brilliance, knack, or just dumb luck of stumbling over a problem whose solution makes all of us see the world in a new way. It's easy to recognize a good problem when we bump into it, or it bumps into us. But researchers often begin a project without being clear about what their real problem is. Sometimes they hope just to define a puzzle more clearly. Indeed, those who find a new problem or clarify an old one often make a bigger contribution to their field than those who solve a problem already defined. Some researchers have even won fame for *disproving* a plausible hypothesis that they had set out to prove.

So don't be discouraged if you can't formulate your problem fully at the outset of your project. Few of us can. But thinking about it early will save you hours of work along the way (and perhaps panic toward the end). It also gets you into a frame of mind crucial to advanced work. Here are some things you can do to identify and refine a good problem.

4.3.1 Ask for Help

Do what experienced researchers do: talk to colleagues, teachers, classmates, relatives, friends, neighbors—anyone who might be interested. Why would anyone want an answer to your question? What would they do with it? What new questions might an answer raise?

If you are free to work on any problem, look for a small one that is part of a bigger one. Though you won't solve the big one, your small piece of it will inherit some of its larger significance. (You will also educate yourself about the problems of your field, no small benefit.) If you are a student, ask your teacher what she is working on and whether you can work on part of it. Don't let her suggestions define the limits of your research. Nothing discourages a teacher more than a student who does *exactly* what is suggested *and no more.* Teachers want you to use their suggestions to *start* your thinking, not *end* it. Nothing makes a teacher happier than when you use her suggestions to find something she never expected.

4.3.2 Look for Problems as You Read

You can also find research problems in your sources. Where in them do you

see contradictions, inconsistencies, incomplete explanations? Tentatively assume that other readers would or should feel the same. Many research projects begin with an imaginary conversation with the author of a source: *Wait a minute, he's ignoring . . .* But

before you set out to correct a gap or misunderstanding, be sure it's real, not just your own misreading. Countless research papers have refuted a point that no one ever made. Before you correct a source, reread it carefully. (In 6.3 we list several common "moves" that writers make to find a problem in a source, variations on *Source thinks X, but I think Y.*)

Once you think you've found a real puzzle or error, do more than just point to it. If a source says X and you think Y, you may have a research problem, but only if you can show that those who think X misunderstand some larger issue as well.

Finally, read the last few pages of your sources closely. That's where many researchers suggest more questions that need answers. The author of the following paragraph had just finished explaining how the life of nineteenth-century Russian peasants influenced their performance as soldiers:

> And just as the soldier's peacetime experience influenced his battlefield performance, so must the experience of the officer corps have influenced theirs. Indeed, a few commentators after the Russo-Japanese War blamed the Russian defeat on habits acquired by officers in the course of their economic chores. In any event, to appreciate the service habits of Tsarist officers in peace and war, *we need a structural—if you will, an anthropological—analysis of the officer corps like that offered here for enlisted personnel.* [our emphasis]

That last sentence offers a new problem waiting for you to tackle.

4.3.3 Look at Your Own Conclusion

Critical reading can also help you discover a good research problem in your own drafts. We often do our best thinking in the last few pages that we write, because there we formulate claims we did not anticipate when we started. If in an early draft you arrive at an unanticipated claim, ask yourself what question it might answer. Paradoxical as it might seem, you may have answered a question that you have not yet asked, and thereby solved a problem that you have not yet posed. Your task is to figure out what that problem might be.

4.4 LEARNING TO WORK WITH PROBLEMS

Experienced researchers dream of finding new problems to solve. A still bigger dream is to solve a problem that no one even knew they had. But that new problem isn't worth much until others think (or can be persuaded) that it needs solving. So the first question an experienced researcher should ask about a problem is not *Can I solve it?* but *Will readers think it should be solved?*

No one expects you to do all that the first time out. But you should begin to develop mental habits that will prepare you for that moment. Research is more than just accumulating and reporting facts. Try to formulate a question that *you* think is worth answering, so that down the road, you'll know how to find a problem that *others* think is worth solving. Until you can do that, you risk the worst response a researcher can get: not *I don't agree*, but *I don't care*.

By now, all this talk about airy academic research may seem disconnected from what some call the "real world." But in business and government, in law and medicine, in politics and international diplomacy, no skill is valued more highly than the ability to recognize a problem, then to articulate it in a way that convinces others both to care about it and to believe it can be solved, especially by you. If you can do that in a class on Byzantine pottery, you can do it in an office on Main Street, Wall Street, or Queen's Road in Hong Kong.

Quick Tip: Manage the Unavoidable Problem of Inexperience

We all feel anxious when we start work in a new field whose values, concerns, and ways of thinking and arguing we don't entirely understand. In fact, we authors still experience that newcomer's anxiety again when we begin new kinds of projects on new topics. You can't avoid experiencing that feeling at times, but there are ways to manage it:

Know that uncertainty and anxiety are natural and inevitable. Those feelings don't signal incompetence, only inexperience.

Get control over your topic by writing about it along the way. Don't just retype or photocopy sources: write summaries, critiques, questions, responses to your sources. Keep a journal in which you reflect on your progress. This kind of writing not only helps you understand what you read but stimulates your thinking

about it. The more you write early on, no matter how sketchily, the easier it will be to face that intimidating first draft.

Break the task into manageable steps and know that they are mutually supportive. Once you formulate a good question, you'll draft and revise more effectively. The more you anticipate how you will write and revise a first draft, the more effectively you will produce it.

If you are a student, count on your teachers to understand your struggles. They want you to succeed, and you can expect their help. (If they don't help, look for others who will.)

Set realistic goals. You do something significant when you wind up your project feeling that it has changed just what *you* think and that your readers think you did it well, even if they don't agree with your claims.

Most important, recognize the struggle for what it is—a learning experience. To overcome the problems that all beginners face, do what successful researchers do, especially when discouraged: review your plan and what you've written, then press on, confident that it will turn out OK. Perhaps only "OK—considering," but probably a lot better than that.

5 From Problems to Sources

> If you are a new researcher and expect to find most of your sources in your library or on the Internet, this chapter will help you develop a plan for your research. If you are more experienced, you might skip to the next chapter.

If you have not yet formulated a research question, you may have to spend time reading generally on your topic to find one. But if you have a question and at least one promising answer (the philosopher C. S. Peirce called it a *hypothesis on probation*), you can start looking for data to test it.

To do that efficiently, you need to have a plan. If you plunge into any and all sources on your topic, you risk losing yourself in an endless trail of books and articles. To be sure, aimless browsing can be fun, even productive. We indulge in it a lot. Many important discoveries have begun in a chance encounter with an unexpected idea. But if you have a deadline, you need more than luck to find good sources in time: you have to search systematically for those sources that will help you advance your research project or, just as usefully, challenge you to improve it. In this chapter, we discuss different ways you can use sources in your research, how you can find useful sources, and how you can winnow your sources to a manageable number. In the next chapter, we focus on how to use sources in your writing.

5.1 THREE KINDS OF SOURCES AND THEIR USES

Sources are conventionally categorized into three kinds: primary, secondary, and tertiary. Their boundaries are fuzzy, but knowing these categories can help you plan your research.

5.1.1 Primary Sources

Primary sources are “original” materials that provide you with the “raw data” or evidence you will use to develop, test, and ultimately justify your hypothesis or claim. What kinds of materials count as primary sources vary significantly by field. In history, primary sources are artifacts or documents that come directly from the period or event you are studying: letters, diaries, objects, maps, even clothing. In literature or philosophy, your main primary source is usually the text you are analyzing, and your data are the words on the page. In arts criticism, your primary source would be the work of art you are interpreting. In social sciences, such as sociology or political science, census or survey data would also count

as primary sources. In the natural sciences, reports of original research are sometimes characterized as primary sources (although scientists themselves rarely use that term).

5.1.2 Secondary Sources

Secondary sources are books, articles, or reports that are based on primary sources and are intended for scholarly or professional audiences. The body of secondary sources in a field is sometimes called that field's "literature." The best secondary sources are books from reputable university presses and articles or reports that have been "peer-reviewed," meaning that they were vetted by experts in the field before they were published. Researchers read secondary sources to keep up with developments in their fields and, in this way, to stimulate their own thinking. The standard way of framing new research problems is to challenge or build on the conclusions or methods of others, as presented in secondary sources they have written. You can also borrow evidence from secondary sources to use in your own arguments, but you should do so only if you do not have access to the primary sources from which that evidence was originally taken. Otherwise you risk appearing careless or lazy.

5.1.3 Tertiary Sources

These are books and articles that synthesize and report on secondary sources for general readers, such as textbooks, articles in encyclopedias (including *Wikipedia*), and articles in mass-circulation publications like *Psychology Today*. In the early stages of research, you can use tertiary sources to get a feel for a topic. But if you are making a scholarly argument, you should rely on secondary sources, because these make up the "conversation" in which you are seeking to participate. If you cite tertiary sources in a scholarly argument, you will mark yourself as either a novice or an outsider, and many readers won't take you—or your argument—seriously.

This response may seem unfair, but it's not. Tertiary sources aren't necessarily wrong—many are in fact written by distinguished scholars—but they are limited. Because they are intended for broad audiences who are unfamiliar with the topics that they address, they can sometimes oversimplify the research on which they are based, and they are susceptible to becoming outdated. But if you keep these limitations in mind, tertiary sources can be valuable resources: they can inform you about topics that are new to you, and if they have bibliographies, they can sometimes lead you to valuable secondary sources.

5.1.4 Differentiating Primary, Secondary, and Tertiary Sources

Researchers haven't always divided their sources into these three categories. The distinction between primary and secondary sources originated with historians in the nineteenth century and then spread to other fields. The category of tertiary sources was added later. Although this scheme is now the standard way that students are taught to classify sources, it fits some disciplines better than others: it works very well for history, in which primary sources are materials directly connected to a historical event or moment, and for criticism, in which primary sources are the original works of art, music, or literature that you are interpreting. But it works less well for, say, philosophy, chemistry, or nursing.

It is also important to understand that the classifications of primary, secondary, and tertiary are not absolute but relative to a researcher's project. In most instances, an article in a scholarly journal would generally be considered a secondary source. But it would become a primary source if your research problem concerned its author or the field itself: if, for example, you are writing the author's biography or trying to figure out whether patriotic historians have distorted stories of the Alamo. Likewise, an encyclopedia article would usually be considered a tertiary source, but it would become a primary source if you were studying the way encyclopedias deal with gender issues. T. S. Eliot's essay "Hamlet and His Problems" would be a primary source if you were studying Eliot but a secondary source if you were studying Shakespeare. Change your focus and you change the classification of your sources.

If this is confusing, it need not be. Remember that these classifications are just a means to an end. The important thing, ultimately, is not what you *call* your sources but how well you *use* them to address your research problems, develop new ideas, and make interesting arguments. In the next chapter, we will talk more about how you can use sources in your writing.

5.2 NAVIGATING THE TWENTY-FIRST-CENTURY LIBRARY

Walk into a university library today and you might wonder, "Where are the *books*?" (Answer: they are still there, though many have been moved to off-site storage.) The card catalog has long since been replaced by electronic search engines, and print materials—books, journals, photographs, films, video and audio recordings—are increasingly being

digitized. Today you don't even need to enter the library to use many of its resources. But whether you visit in person or through a website, the library is an indispensable tool for research.

Given the volume of data available on the Internet, you might think that libraries are no longer necessary—except, perhaps, for highly specialized research. We believe the opposite is true. Because *so much* information is now at our fingertips, libraries are more essential than ever when conducting research. Libraries not only let us access information but also ensure that our sources are reliable. Even if your public or academic library is comparatively small, it can serve as a *portal* to a much broader range of resources—research guides, reference works, and online databases—that extends the library's reach. Of course, to benefit from these resources, you must learn to navigate the twenty-first-century library.

5.2.1 Planning Your Library Search

Before you can use sources, you must first find and evaluate them. Some materials that will eventually serve as sources will be physically located in your library, but others are likely to be located elsewhere, whether online or at another library. To take advantage of what libraries have to offer, then, you must *plan* your search. Fortunately, this is where libraries—and librarians— are most useful.

Knowing where to begin your search can be overwhelming at first. It is tempting to simply search a few terms and see what comes up. We do this too, but we also know that the library offers more systematic and productive methods for discovering useful and credible sources. Use the library to learn more about your topic and about promising avenues for exploring your research question.

Ask a Librarian. Perhaps the best advice we can offer is to rely on the research expertise of librarians. Both general reference librarians and (in larger libraries) subject area specialists can help you refine your search parameters and direct you to the right tools for your specific research question. They can help you use the catalog to locate materials held by your library or by other libraries (and obtainable through interlibrary loan). These same librarians typically design research guides that identify reference works and online databases for specific fields.

And don't be shy. Librarians love to assist researchers of all levels and at all stages of the research process. They can help you formulate your research question and plan, develop search terms, and inventory your results to ensure you haven't overlooked something of value. The only embarrassing question is the one you *failed to ask* but should have. Of course, it pays to meet busy librarians halfway by preparing in advance. If you have a well-developed research question ready to share, your librarian will be able to give you better advice. You might describe your project using the three-step rubric from chapter 3:

> I am working on educational policy in the 1980s
>
> to find out how school boards in the Midwest dealt with desegregation,
>
> because I want to understand regional differences in race relations.

Consult Reference Works. If you already know a lot about your topic, you probably also know how to find sources on it. But if you are new to a topic, resist the temptation to go straight to primary or secondary sources that strike you as relevant. This approach is unreliable and unpredictable and probably won't save you any time. A more successful strategy is to allow reference works to shape your search efforts. Compiled by experts, both general reference works such as the *Encyclopaedia Britannica* and more specialized works such as the *Encyclopedia of Philosophy* will give you the lay of the land, so that later it will be easier to see how your sources fit within the bigger picture. In addition, reference works often include citations or bibliographies that can lead you to sources you might otherwise overlook.

Especially valuable at early stages of research are bibliographic works, many of which provide abstracts summarizing significant articles or books on a topic. Look, especially, for annotated bibliographies or annual literature reviews that sum up recent books or articles; these offer the most promising leads for your research.

Explore Online Databases. What sets libraries apart from the Internet are their subscriptions to indexes and databases. After books, these are arguably a library's most valuable assets, since they give researchers access to materials they could not obtain otherwise. Each library's subscriptions will differ, with major research libraries offering the most comprehensive access to specialized indexes and databases. However, every academic library and many public libraries offer a powerful set of online tools that greatly

extend their actual collections. You will certainly want to make use of these general and specialized resources in your research. At least become familiar with the major databases to which your library subscribes, such as Academic Search Premier, MLA International Bibliography, or PubMed. Many academic databases either provide abstracts or direct you to articles that include abstracts. Looking at these can help you decide if an article itself is worth reading carefully. Some databases allow you to access full-text articles and even books. But be aware: If your library does not subscribe to a particular journal included in a database, you might be asked to pay a fee to access a full-text article. Before doing so, *always* speak with a librarian about other means of access.

5.2.2 Finding Specific Sources

Having identified a range of search strategies and resources, you are now in a position to look for specific sources in and beyond the library. Of course, this process is not strictly linear. A single source can lead to others and return you to catalogs and databases you have already visited, only this time with new search terms. Novice researchers often rely too heavily on only a few terms or on terms that prove to be too broad—or narrow—to call up relevant sources. Successful researchers know they have to be flexible: searches typically involve trial and error to discover those terms that will yield the most relevant sources.

Search Your Library Catalog. In your research, you will probably need to use your library's catalog in two complementary ways: keyword searching and browsing. When you have examined some sources to identify a list of *keywords* associated with your topic, you are ready to use these terms to search the catalog. In most libraries, you must choose the category (books, articles, journals, etc.) you wish to use for your search.

If your sources include books, you can use Library of Congress subject headings, found either on the back of their title page or on their "details" page in the online catalog, to search for related materials. On the back of this book's title page are the terms

1. Research—Methodology. 2. Technical writing.

If you search an online catalog for those terms, you will find all the books on those subjects in that library. A book may be cross-listed under multiple subject headings. In that case, take a quick look at the titles listed under those headings as well. You may find

useful sources you would have missed otherwise. You can also *browse* the catalog for books with similar *call numbers*. Once you identify a book that seems on target, use its call number to find others shelved along with it. Look for the browse link in your book's catalog entry. This list will be less focused than a keyword list, but it may also contain unexpected gems. So don't restrict yourself to books nearest your target. Invest the time to browse widely.

The problem with any online search is that it may produce an overwhelming number of titles. The University of Chicago library has more than three hundred books on Napoleon and thousands with the word *environment* in their titles. If your search turns up too many sources, narrow it down. Today's online catalogs let you limit searches in many ways: by date of publication, language, subject, resource type (books, articles, databases, etc.), and possibly others depending on the catalog. If you can't decide how to narrow your search, start with the date of publication. Restrict it to those sources published in the last fifteen years; if that still turns up too many, cut to the last ten years.

After you search the Library of Congress or a large university catalog, you may discover that your own library holds only a fraction of what you found, but that it can borrow most of what you need. For books too new to be in a library catalog but crucial to your research, find an online bookseller. Those books might turn up on your library's new acquisitions shelf, and you can always recommend books to your library for acquisition. But if you need those books quickly, you'll probably have to buy them.

On the other hand, if you find nothing, your topic may be too narrow or too far off the beaten track to yield quick results. But you could also be on to an important question that nobody else has thought about, at least not for a while. For example, "friendship" was once an important topic for philosophers, but it was then ignored by major encyclopedias for centuries. Recently, though, it has reemerged as a topic of serious research. Chances are you'll make something of a neglected topic only through your own hard thinking. In the long run, that research might make you famous, but it probably won't work for a paper due in a few weeks.

Prowl the Stacks. Doing research online is faster than on foot, but if you never go into the stacks of your library (assuming you're allowed to), you may miss crucial sources that you'll find only there. More important, you'll miss the benefits of serendipity—a chance

encounter with a valuable source that occurs only when a title happens to catch your eye. (All of us have found important sources in this way.)

If you can get into the stacks, find the shelf with books on your topic, then scan the titles on that shelf, then on the ones above, below, and on either side, especially for books with new bindings published by university presses. Then turn around and skim titles behind you; you never know. When you spot a promising title, skim its table of contents and index for keywords related to your question and answer. Then skim its bibliography for titles that look relevant. You can do all that faster with a book in your hand than you can online. Be suspicious of a book with no index or bibliography. (See 5.4 for more on systematic skimming.)

You can check tables of contents for most journals online, but browsing among shelved journals can be more productive. Once you identify promising journals online or in bibliographies, find them on the shelf. Skim the bound volumes for the last ten years (most have an annual table of contents in front). Then take a quick look at journals shelved nearby. You'll be surprised how often you find a relevant article that you would have missed online.

Follow Bibliographic Trails. Most sources will give you trailheads for bibliographical searches. When you find a book that seems useful, skim its bibliography or works cited. Its index will list the authors cited most often (generally, the more citations, the more important an author is). Journal articles usually begin with a review of previous research, all cited. By following this bibliographic trail, you can navigate the most difficult research territory, because one source always leads to others, which lead to others, which lead to . .

Use Citation Indexing. Many online catalogs and databases let you look up *other* sources that cite one that you already know. This technique, called citation indexing, is like following a bibliographic trail, forward or backward. Instead of searching for sources that a given source cites, *backward* citation, you can search for sources that cite a given source, or *forward* citation. A source's credibility can thus be gauged both by the sources it cites and by the sources that cite it. The more a given source is later cited, the greater its reputation and its impact factor.

To do this kind of research, researchers used to have to consult printed citation indexes, a process that could take hours or even days. But today's online catalogs and

databases make it easy. By following bibliographic trails and using citation indexing in tandem, you can build up a rich network of sources to support your own research.

5.3 LOCATING SOURCES ON THE INTERNET

You probably already know how to search the publicly available Internet: type a few words into the text box of a public search engine like Google, and pages of links—delivered as URLs, or uniform resource locators—arrive on your screen. We use this technique all the time, to find movie times, restaurant reviews, stock prices, news items, and so on. Its ubiquity in our everyday lives is reflected in our language. We've turned the name of a company into a verb: in everyday parlance, to "Google" something is to search for it.

Your practical experience with such everyday research might lead you to regard the Internet as comprehensive and reliable. (You use it to price a smartphone or pair of jeans, so why not for your academic or professional research?) But that would be a mistake. Again, remember that your library's catalogs and databases will allow you to access a great deal of information that you cannot get through a search engine. When using the Internet for research, maintain a healthy skepticism: most of what we retrieve using Google or some other search engine is perfectly reliable, but not everything is. In contrast to your library's catalogs and databases, the Internet is essentially unmonitored. There is no one to vouch for the credibility of materials posted to, and sent from, countless websites. And finally, keep in mind that companies offering free search engines make their money by acquiring data about you through your online behavior and by selling advertising, and that webmasters routinely modify their sites to make them appear higher in search results. These practices are not necessarily nefarious, but you should remember that search engine companies and websites themselves have an interest in where you go and what you see online.

But if you keep these limitations in mind, using the Internet can be a valuable component of your research plan. Here are some ways in which we use the Internet in our own research:

To get our bearings with respect to a new topic—regarding everything we learn at this stage as provisional

To explore potential keywords to use in a more systematic search

To remind ourselves of dates or facts—again remembering to check these against more reliable sources

To locate the authors of sources whom we might wish to contact: profiles of many scholars and researchers are available on college and university websites

To get a "ballpark" sense of what we are likely to find through a search of specialized databases by a quick search using Google Scholar

Publicly available general tertiary sources such as *Wikipedia* and specialized ones such as the Victorian Web are often quite reliable. But you should still view them skeptically. In general, don't use the Internet to find secondary sources, as these depend for their credibility on the checks inherent in the academic publishing system, especially that of peer review. You can, however, use the Internet freely as a primary source. For example, if you study how soap opera story lines respond to their fans' reactions, fan blogs would be fine primary sources. (We discuss evaluating sources in the next section.)

Respecting Authors' Rights. Sites such as Project Gutenberg and Google Books can provide reliable online copies of older texts no longer in copyright. But postings of more recent texts (in the United States, those published in 1923 or later) may violate the author's copyright. Careful readers dislike seeing unauthorized copies cited not only because that breaks the law but also because such texts are often inaccurately reproduced. So unless a recent text is posted with the author's clear permission (as in a database), use its print rather than its e-version.

5.4 EVALUATING SOURCES FOR RELEVANCE AND RELIABILITY

When you start looking for sources, you'll find more than you can use, so you must quickly evaluate their usefulness. To do so use two criteria: relevance and reliability.

5.4.1 Evaluating Sources for Relevance If your source is a book, do this:

Skim its index for your keywords, then skim the pages on which those words occur.

Skim the first and last paragraphs in chapters that use a lot of your keywords.

Skim prologues, introductions, summary chapters, and so on.

Skim the last chapter, especially the first and last two or three pages.

If the source is a collection of articles, skim the editor's introduction.

Check the bibliography for titles relevant to your topic.

If your source is an e-book, you should still follow these steps, but you can also search the whole text for your keywords.

If your source is an article, do this:

Read the abstract, if it has one.

Skim the introduction and conclusion; or if they are not marked off by headings, skim the first six or seven paragraphs and the last four or five.

Skim for section headings, and read the first and last paragraphs of those sections.

Check the bibliography for titles relevant to your topic.

If your source is online, do this:

If it looks like a printed article, follow the steps for a journal article, and also search on your keywords.

Skim sections labeled "introduction," "overview," "summary," or the like. If there are none, look for a link labeled "About the Site" or something similar.

If the site has a link labeled “Site Map” or “Index,” check it for your keywords and skim the referenced pages.

- If the site has a “search” resource, type in your keywords.

This kind of speedy reading can guide your own writing and revision. If you do not structure your paper so your readers can skim it quickly and see the outlines of your argument, your paper has a problem, an issue we discuss in chapters 12 and 13.

5.4.2 Evaluating Sources for Reliability

You can’t judge a source until you read it, but there are signs of its reliability:

Is the source published or posted online by a reputable press? Most university presses are reliable, especially if you recognize the name of the university. Some commercial presses, which are presses not associated with a university, are reliable in some fields, such as Norton in literature, Ablex in sciences, or West in law. Be skeptical of a commercial book that makes sensational claims, even if its author has a PhD after his name. Be especially careful about sources on hotly contested social issues such as stem-cell research, gun control, and global warming. Many books and articles are published by individuals or organizations driven by ideology. Libraries often include them for the sake of coverage, but don’t assume they are reliable.

Was the book or article peer-reviewed? Most reputable presses and journals ask experts to review a book or article before it is published; this is called peer review. Essay collections published by university presses are often but not always peer-reviewed; sometimes they are reviewed only by the named editor or editors. Few commercial magazines use peer review. If a publication hasn’t been peer-reviewed, be suspicious.

Is the author a reputable scholar? This is hard to answer if you are new to a field. Most publications cite an author’s academic credentials; you can find more with a search engine. Most established scholars are reliable, but be cautious if the topic is a contested social issue such as gun control or abortion. Even reputable scholars can have axes to grind, especially if their research is financially supported by a special interest group. Go online to check out anyone an author thanks for support, including foundations that supported her work.

If the source is available only online, is it sponsored by a reputable organization? A website is only as reliable as its sponsor. You can usually trust

one that is sponsored and maintained by a reputable organization. But if the site has not been updated recently, it may have been abandoned and may no longer be endorsed by its sponsor. Some

sites supported by individuals are reliable; most are not. Do a web search for the name of the sponsor to find out more about it.

Is the source current? You must use up-to-date sources, but what counts as current depends on the field. In computer science, a journal article can be out-of-date in months; in the social sciences, ten years pushes the limit. Publications have a longer shelf life in the humanities: literary or art criticism, for example, can remain relevant for decades and even centuries. In general, a source that sets out a major position or theory that other researchers accept will stay current longer than those that respond to or develop it. Assume that most textbooks are *not* current. If you are unsure whether a source will be considered current, take your lead from the practice of established researchers in the field. Look at the dates of articles in the works cited lists of a few recent books or articles in the field: a good rule of thumb is that you can cite works as old as the older ones in that list (but to be safe, perhaps not as old as the oldest). Try to find a standard edition of primary works such as novels, plays, letters, and so on: it is usually not the most recent. Be sure that you consult the most recent edition of a secondary or tertiary source: researchers often change their views, even rejecting ones they espoused in earlier editions.

If the source is a book, does it have notes and a bibliography? If not, be suspicious, because you have no way to follow up on anything that the source claims.

If the source is a website, does it include bibliographical data? You cannot judge the reliability of a site that does not indicate who sponsors and maintains it, who wrote what's posted there, and when it was posted or last updated.

If the source is a website, does it approach its topic judiciously? Your readers are unlikely to trust a site that engages in heated advocacy, attacks those who disagree, makes wild claims, uses abusive language, or makes errors of spelling, punctuation, and grammar.

The following criteria are particularly important for advanced students:

If the source is a book, has it been well reviewed? Many fields have indexes to published reviews that tell you how others evaluate a source (see our "Appendix: Bibliographic Resources").

Has the source been frequently cited by others? You can roughly estimate how influential a source is by how often others cite it. Citation indexing makes this easy to do (see 5.2.2). If you find that a source is cited repeatedly by other scholars, you can infer that experts in the field regard it as reliable and significant. Such sources are said to have a high

"impact factor." You should keep an eye out for such sources and use them to orient yourself in your field of research.

Whom Can You Trust?

The highly respected *Journal of the American Medical Association* appointed a committee to review articles published by reputable journals for reliability. Even though those papers had been approved by experts in the field, the reviewers reported that "statistical and methodological errors were common" ("When Peer Review Produces Unsound Science," *New York Times,* June 11, 2002, p. D6). In the face of such revelations, some just dismiss what scientists publish: if the reviewers of scientific articles can't guarantee reliable data, what is a mere layperson to do? You do what we all do—the best you can: read critically, and when you report data, do so as accurately as you can. We'll return to this question in chapter 8.

Error is bad, but dishonesty is worse. One of Booth's students got a summer job with a drug company and was assigned to go through stacks of doctors' answers to questionnaires and shred certain ones until nine out of ten of those left endorsed the company's product. These bogus data were then used to "prove" that the product worked. The student quit in disgust and was, no doubt, replaced by someone less ethical.

These indicators do not guarantee reliability. Reviewers sometimes recommend that a reputable press publish something weakly argued or with thin data because other aspects of its argument are too important to miss—we have each done so. So don't assume that you can read uncritically just because a report is written by a reputable researcher and published by a reputable press.

5.5 LOOKING BEYOND PREDICTABLE SOURCES

For a class paper, you'll probably use the sources typical in your field. But if you are doing an advanced project, an MA thesis, or a PhD dissertation, search beyond them. If, for example, your project were on the economic effects of agricultural changes in late sixteenth-century England, you might read Elizabethan plays involving country characters, look at wood prints of agricultural life, find commentary by religious figures on rural social behavior. Conversely, if you were working on visual representations of daily life in London, you might research the economic history of the time and place. When you look beyond the standard *kinds* of references relevant to your question, you enrich not only your analysis but your range of intellectual reference and your ability to synthesize diverse kinds of data, a crucial competence of an inquiring mind. Don't ignore a work on your topic that is not mentioned in the bibliographies of your most relevant sources—you will get credit for originality if you turn up a good source that others have ignored.

When They Beat You to the Punch

Don't panic if you find a source that seems to pose and solve precisely your problem: "Transforming the Alamo Legend: History in the Service of Politics." At that moment you might think, *I'm dead. Nothing new to say.* (It happened to Williams when he was writing his doctoral dissertation and to Colomb just before his first book came out.) You may be right, but probably not. If the source does in fact settle your exact question, you have to formulate a new one. But the question your source asked is probably not as close to yours as you first feared. And you may find that you can do the source one better: if the author failed to get things entirely right, you have an unwitting ally in formulating your problem.

5.6 USING PEOPLE TO FURTHER YOUR RESEARCH

One of the paradoxes of twenty-first-century research is that even as new technologies allow us to access an unprecedented wealth of materials with unprecedented ease, research has also become more personal. So as you undertake your project, don't forget about the human element.

Most obviously, people can be sources of primary data, collected through observation, surveys, or interviews. Be creative when using people for primary research: don't ignore people in local business, government, or civic organizations. For example, if you were researching school desegregation in your town, you might go beyond the documents to

ask the local school district whether anyone there has memories to share. We can't explain the complexities of interviewing (there are many guides to that process), but remember that the more you plan by determining *exactly* what you want to know, the more efficiently you will get what you need. You don't need to script an interview around a set list of questions—in fact, that can be a bad idea if it makes the interviewee freeze up. But prepare so that you don't question your source aimlessly. You can always reread a book for what you missed, but you can't keep going back to people because you didn't prepare well enough to get what you needed the first time. And always remember that when conducting primary research that involves people, you must adhere to rigorous ethical standards (see the Quick Tip at the end of this chapter).

People can also lead you to good secondary sources or serve as such sources themselves. We noted earlier that the body of secondary sources on a topic constitutes the scholarly "conversation" about it. That was a metaphor. But you can and should have real conversations about your research as well. Above we encouraged you to discuss your research with one kind of expert: your reference librarian. Your librarian is an expert on the processes of library research. You can also benefit from talking directly with experts on your topic. Ask them about the important open questions in the field. Ask them what they think of your project or provisional thesis. Ask them to suggest secondary sources for you to read. This kind of personal guidance can be invaluable to a novice researcher, and many experts will be happy to talk with you (or at least engage in a little e-mail correspondence).

All of us have made these kinds of queries with great success in our own

research, and all of us have responded to them in turn, by helping those who have contacted us. One of us once invited an eminent scholar to talk about his research process to a group of first-year college students. He began his talk by saying, "I don't really have a research process; I just ask my smart friends what I should read." This scholar was being at least a bit tongue in cheek, but we could all do worse than to rely on such smart friends, at least to get us started.

Quick Tip: The Ethics of Using People as Sources of Data

In recent years we have become increasingly aware that research using people may inadvertently harm them—not just physically but by embarrassing them, violating their privacy, and so on. So every college or university now has a committee that reviews all research directly or indirectly involving people, whether done by students or professional researchers. These committees go by different names—Human Subjects Committee, Institutional Review Board, Ethics Research Board, and so on—but they all aim to ensure that researchers follow the maxim that should govern research as it does medicine: *Do no harm.* Consult with that committee if you use people as sources of data—whether by interviewing, surveying, perhaps even just observing them. Jumping through these hoops may feel like bureaucratic make-work, but if you don't, you could harm those who help you and may even damage your institution.

6 Engaging Sources

> To make your research reliable, you must use your sources fairly and accurately. In this chapter, we explain how to engage your sources productively and how to take notes so that readers can trust you when you rely on or critique a source.

In this chapter, we show you how to get the most out of your sources, especially your secondary sources. We've chosen that focus for a simple reason: it's a topic on which we can offer useful, general advice. The ways that researchers find or create their data, and the kinds of data readers expect as evidence, vary wildly from field to field. Historians and literary critics typically comb primary sources for passages they can use as evidence. Other researchers, however, don't use primary sources at all: depending on their fields, they might analyze soil samples in a lab, or conduct a survey, or build a computer model. But every field has its body of secondary sources, sometimes called its *literature*, that document the field's conversation. And researchers in all fields engage these sources in similar ways.

How you use your secondary sources depends on where you stand in your search for a project. Experienced researchers read secondary sources regularly to keep up with work in their fields, and so they usually begin their projects with a question or problem in mind. But if you are new to a subject or you still have only a topic, you may have to read a lot of sources to find a problem to pursue, and then even more to figure out how to solve it. In this chapter, we show you how to read secondary sources as experienced researchers do: not just for data you can use in your own argument but more importantly for questions, problems, and arguments that spur your own thinking.

6.1 RECORDING COMPLETE BIBLIOGRAPHICAL INFORMATION

First things first: once you decide a source is worth reading, record *all* of its bibliographical information. Do this before you do anything else: it only takes a moment, and we promise that no habit will serve you better for the rest of your career.

You need the bibliographic information for your sources not only so that you can recall what you have read, but also so that you can credit your sources when you write. In your own notes, you can record bibliographic data in whatever format you like—so long as your records are complete; when you cite sources in your writing, you should follow the citation style of your field (see 14.5).

For printed books, record

- author(s)
- title (including subtitle)
- editor(s) and translator(s) (if any)
- edition
- volume
- place published (only the first city if more than one is listed)
- publisher
- date published
- page numbers of articles or chapters consulted
- library call number (if any)
- ISBN

For electronic books, record everything you would record for a printed book plus

- URL (if any)
- name of database (if any)
- date of access
- electronic format of the book

For journal articles, record

- author(s)
- title (including subtitle) of article
- title of journal
- volume and issue number
- date
- page numbers of article
- library call number (if any)

For online sources, record as much of the above as applies. Also record

- URL
- name of database (if any)
- date of access
- Webmaster (if identified)

If you access a printed text online, record bibliographical data from the original printing as well as your source of online access.

If you scan or photocopy a passage from a book, also scan or photocopy its title page and the bibliographic information on the reverse side. Then add the library call number if you know it. You won't need to include the call number when you cite the source, but knowing it will allow you to find the source again easily if you need it.

You may think this advice is overly cautious, but it isn't. Nothing is more frustrating than having the perfect quotation or bit of data in your notes and being unable to use it in your writing, because you didn't completely document your source and can't find it again.

> Williams once had to withhold a publication on Elizabethan social history for more than a year because he failed to document a source fully. Years earlier he had come across some data—a list of renters in London in 1638 —he thought he would someday find useful. But he had failed to record complete information on his source, so when that day came, he could not use its data. He searched the library

at the University of Chicago for hours, until one night he sat up in bed, realizing that the source was in a different library!

6.2 ENGAGING SOURCES ACTIVELY

Experienced researchers don't read passively; they engage their sources actively, entering into conversation with them. If you can, read important sources twice. First, read generously. Pay attention to what sparks your interest. Reread passages that puzzle or confuse you. Don't look for disagreements right away, but read in ways that help the source make sense. Otherwise, you'll be tempted to emphasize its weaknesses if it presents an argument that rivals yours. Resist that temptation, at least at first.

Then, if your source seems important or seems to challenge your own position, read it a second time slowly and more critically. When you read a passage, think not only about what it says but about how you would respond. Record those responses in your notes or—if you own the source or are working from a copy—in the margins of the source itself. Test your understanding by summarizing: if you can't sum up a passage in your mind, you don't understand it well enough to disagree.

Don't accept a claim just because an authority asserts it. For decades, researchers cited the "fact" that the Inuit people of the Arctic had many terms for types of snow. But another researcher found that they have just three (or so she claims). And understand that experts frequently disagree. If Expert A says one thing, B will assert the opposite, and C will claim to be an expert but is not. When some students hear experts disagree, they become cynical and dismiss expert knowledge as just opinion. But don't mistake informed and thoughtful debate over legitimately contested issues for mere opinion. In fact, it's the mark of an active field.

If you are an advanced researcher, check the accuracy of everything important to your argument. Researchers whose work has been used by others will tell you, as often as not, that it was reported inaccurately, summarized carelessly, or criticized ignorantly. Writers regularly write to the *New York Review of Books* and the "Book Review" of the *New York Times*, pointing out how reviewers distorted their ideas or made factual errors criticizing them.

Check—and Check Again

Researchers rarely misrepresent sources deliberately, but they are occasionally careless or intellectually lazy. Colomb heard a prominent researcher confess after her talk that she had never read the work she had just discussed. One of Booth's books was "refuted" by a critic who apparently read only the title of a section, "Novels Must Be Realistic." Failing to read beyond it, he didn't know that Booth himself was attacking the claim in the title, along with other misconceptions about fiction. One reviewer of a book by Williams misquoted him and then, thinking he was disagreeing with him, argued for the point Williams made in the first place!

6.3 READING FOR A PROBLEM

Once you have a research problem, use it to guide your search for evidence, models, and arguments to respond to. But if you don't yet have one, you won't know which data, models, or arguments might be relevant. So read sources not randomly but deliberately to find a problem. Look for claims that seem puzzling, inaccurate, or simplistic—anything you can disagree with. You're more likely to find a research problem when you disagree with a source, but you can also find one in sources you agree with.

6.3.1 Look for Creative Agreement

If you believe what a source claims, try to extend that claim: What new cases might it cover? What new insights can it provide? Is there confirming evidence the source hasn't considered? Here are some ways to find a problem through creative agreement.

Offer additional support. You can offer new evidence to support a source's claim.

Smith uses anecdotes to show that the Alamo story had mythic status beyond Texas, but editorials in big-city newspapers offer better evidence.

Source supports a claim with old evidence, but you offer new evidence.

Source supports a claim with weak evidence, but you offer stronger evidence.

Confirm unsupported claims. You can prove something that a source only assumes or speculates about.

Smith recommends visualization to improve sports performance, but MRI studies of the mental activities of athletes offer evidence that shows why that is good advice.

Source speculates _____ might be true, but you offer evidence to show that it is.
Source assumes _____ is true, but you can prove it.

Apply a claim more widely. You can extend a position.

Smith argues that medical students learn physiological processes better when they are explained with many metaphors rather than with just one. The same seems true for engineering and law students.

Source correctly applies _____ to one situation, but you apply it to new ones.
Source claims that _____ is true in a specific situation, but you show it's true in general.

6.3.2 Look for Creative Disagreement

If you read actively, you'll inevitably find yourself disagreeing with your sources. Don't brush those disagreements aside, because they often point to new research problems. Look for these types (the list is not exhaustive, and some kinds overlap):

Contradictions of kind. A source says something is one kind of thing, but it's another.

Smith says that graffiti is merely vandalism, but it is better understood as a form of public art.

Source claims that _____ is a kind of _____, but it's not.

Source claims that _____ always has _____ as one of its features or qualities, but it doesn't.

Source claims that _____ is normal/good/significant/useful/moral/interesting, but it's not.

You can reverse those claims and the ones that follow to state the opposite:

Though a source says _____ is *not* a kind of _____, you can show that it is.

Part-whole contradictions. You can show that a source mistakes how the parts of something are related.

Smith has argued that coding is irrelevant to a liberal education, but in fact, it is essential.

Source claims that _____ is a part of _____, but it's not.

Source claims that one part of _____ relates to another in a certain way, but it doesn't.

Source claims that every _____ has _____ as one of its parts, but it doesn't.

Developmental or historical contradictions. You can show that a source mistakes the origin or development of a topic.

Smith argues that the world population will rise, but it won't.

Source claims that _____ is changing, but it's not.

Source claims that _____ originated in _____, but it didn't.

Source claims that _____ develops in a certain way, but it doesn't.

External cause-effect contradictions. You can show that a source mistakes a causal relationship.

Smith claims that legalizing marijuana will increase its use among teenagers, but evidence shows that it doesn't.

Source claims that _____ causes _____, but it doesn't/they are both caused by _____.

Source claims that _____ is sufficient to cause _____, but it's not.

Source claims that _____ causes only _____, but it also causes _____.

Contradictions of perspective. Most contradictions don't change a conceptual framework, but when you contradict a "standard" view of things, you urge others to think in a new way.

Smith assumes that advertising has only an economic function, but it also serves as a laboratory for new art forms.

Source discusses _____ from the point of view of _____, but a new context or point of view reveals a new truth [the new or old context can be social, political, philosophical, historical, economic, ethical, gender specific, etc.].

Source analyzes _____ using theory/value system _____, but you can analyze it from a new point of view and see it in a new way.

6.4 READING FOR ARGUMENTS

6.4.1 Read for Arguments to Respond To

No argument is complete until it acknowledges and responds to its readers' predictable questions and disagreements. You can find some of those competing views in secondary sources. What alternatives to your claims do they offer? What evidence do they cite that you must acknowledge? Some new researchers think that they weaken their case if they mention any views opposing their own. The opposite is true. When you acknowledge the views of others, you show that you not only know those views, but have carefully considered and can confidently respond to them (for more on this, see chapter 10).

Experienced researchers also use those competing views to improve their own. You can't really understand what you think until you understand why a rational person might think differently. So as you look for sources, don't look just for those that support your claims. Be alert for sources that contradict them, because they are sources that your readers are likely to know.

6.4.2 Read for Models of Reasoning and Analysis

You can use secondary sources in another way as well: as models of reasoning and analysis. If you have never made an argument like the one you plan to, you might follow the pattern of other arguments that you find in your secondary sources. You can't use specific ideas (that would be plagiarism), but you do not plagiarize a source when you borrow its ways of arguing or of analyzing data. (Don't worry that using a source as a model will make your research seem unoriginal. Research arguments are often unoriginal in their methods and ways of reasoning. Readers will look for originality in your problem, claim, and evidence.)

Suppose you want to argue that the Alamo legend thrived because it served the political interests of those who created it and satisfied the emotional needs of those who repeated it. You will need reasons and evidence unique to your claim, but you can raise the *kinds* of issues that readers see in similar arguments about other legends, real or fictional. If, for example, a source shows how the King Arthur legend helped to shape English society and politics, you might make a similar argument about the Alamo and the Republic of Texas. You are not obliged to cite your model, but to gain credibility, you might note that it makes an argument similar to yours:

> Just as the Arthurian legends helped to forge a definitively English social and political identity (Weiman 1998), so the legend of the Alamo . . .

6.5 READING FOR DATA AND SUPPORT

Analysis of Logic.

Analysis of Grammar.

Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
   - Critical Discourse Analysis_ The Critical Study of Language.
   - Discourse analysis.
   - The Routledge handbook of discourse analysis.

6.5.1 Read for Data to Use as Evidence

New researchers regularly mine secondary sources for data, but if you can, check the primary source. If an important quotation is available in its original form and context, it is risky and intellectually lazy not to look it up. You don't have to agree with a source to use its data; in fact, its argument does not even have to be relevant to your question, so long as its data are. However, use statistical data only if you can judge for yourself whether they were collected and analyzed appropriately. (You serve yourself well if you take a course or two in statistics and probability, an area where most Americans are shamefully ignorant.)

6.5.2 Read for Claims to Use as Support

Researchers often use the results they find in secondary sources to bolster their own arguments. If you find a useful claim, you can cite it to support your own, especially if it has been well supported and widely accepted. But many claims show nothing more than that another researcher agrees with you. To use such claims as evidence, you have to report not only the conclusion of the source but its reasoning and supporting evidence as well.

6.6 TAKING NOTES

Once you find a source that you think you can use, you must read it purposefully and carefully. But that will do you little good if you can't locate it again or remember it well enough to use. So again, before you do anything else, record the source's full bibliographic information. Then take notes in a way that will help you not only to remember and use what you have read but also to further your own thinking.

You can take notes on index cards or in a notebook, or you can use your computer or handheld device. You can even take notes online, using any number of web-based solutions, from word processors to elaborate reference-management systems. Each of these approaches has its advantages and disadvantages. You need to understand them and pick the approach that will work best for you.

6.6.1 Taking Notes on Paper

Years ago, the standard way to take notes on sources was to create a file of index cards:

At the top left is the author, short title, and page number. At the top right are keywords that let the researcher sort and re-sort notes into different categories and orders. The body of

the card summarizes the source, records a direct quotation, and includes a comment or thought about further research that is clearly distinguished from the quotation. At bottom left is the call number of the source.

Although few researchers use this method extensively today, we can still learn important principles from it:

> Record complete bibliographic information for each source so that you can cite it properly and find it again easily.
>
> Separate notes on different topics: don't jumble together your notes on different topics, even if they come from the same source.
>
> Make sure your notes are accurate, because you need to be able to rely on them later. (If you want to quote more than a few lines, consider photocopying, scanning, or cutting-and-pasting the passage, or simply saving the whole document.)
>
> Perhaps most important: clearly distinguish (1) what you quote from a source, (2) what you paraphrase or summarize from a source, and (3) your own thoughts. If you are writing on paper, use headings or brackets or different colors of ink to differentiate these different kinds of note. If you are using a computer or taking notes online, use different fonts or different colors of type. We stress that you must *unambiguously* distinguish your own words from those of your sources because it is so easy to confuse the two.

Compared to computer files, paper notes can be cumbersome to store, back up, index, and access, and they are susceptible to transcription errors: when hand-copying quotations, it is surprisingly easy to alter their wording, even when you think you are being careful. Still, paper notes have their uses. For example, a notebook or pack of index cards is cheap and portable, and paper can sometimes go where technology cannot—some archives still require patrons to take notes with paper and pencil. The main reason some researchers still rely on paper notes is that they help with thinking. Since you can't write out everything, using paper forces you to think about what's most important. Likewise, if your notes are on cards or sheets of paper, you can group them, shuffle them, or lay them out on a desk, a table, or even the floor. And the very act of *writing out* your notes can help you not only remember what's in them but also see connections and develop your own ideas. Still, few researchers today rely on paper notes alone. Most use their computers.

6.6.2 Taking Notes on a Computer

When you take notes using a computer, you have several options:

Most simply, you can use a word processor. Create a separate file (or at least a separate page) for each source, and be sure to unambiguously distinguish your own words from those of your source. Word processors are easy to use, but they also limit your ability to index, organize, sort, and search your notes. So for long or complex projects especially, you may want to consider other options.

You can use a dedicated note-taking application to create and organize your notes for a project. Such applications can help you to index, sort, and access your notes, but since they sometimes use proprietary formats, they can make it difficult for you to share your notes or use them with other programs.

You can use a full reference-management system. Such systems do much more than help you organize and access your notes. They can often pull information directly from online library catalogs and databases, and they can format and update your citations and bibliographies when you write. Some will even store full electronic copies of your sources within the reference management system, helping you build and maintain your personal library of sources. But like note-taking programs, these systems sometimes use proprietary formats, and you have to learn to use them.

All three types of application are also available in web-based versions, meaning that the application and your notes reside not on your own computer but in the “cloud.” This protects your data from inadvertent loss or corruption (you don’t have to worry about your hard drive crashing) and can help you share information and collaborate with other researchers.

But whatever technology you use, you have to consider some basic questions:

How will you stay organized? For example, if you plan to create a separate word-processing document for each source, you then need a system for naming and storing your files. Without such a system, it is very easy to “lose” your notes on your hard drive.

How will you use your notes? You may decide to store your notes differently for small projects and large ones, for discrete projects and ongoing ones, for individual projects and collaborative ones.

What applications are available through your school or library? Many schools offer note-taking or reference-management systems to faculty and students, sometimes integrating these tools with their catalogs. If your school offers such resources, consider using them.

Most important: what approach best suits your own ways of writing, thinking, and working? As you grow as a writer and researcher, you will develop ways of working that are particular to you. Others may find them cumbersome or confusing or even incomprehensible. No matter. Remember that your goal is not to create an elaborate set of notes but to research and write capably and intelligently. If a piece of software doesn't help you do that, it isn't useful—to you.

6.6.3 Decide Whether to Quote, Paraphrase, or Summarize

If you can photocopy, scan, or download your source, or you know that you can access it online when you write, you can focus less on preserving its exact words than on your own engagement with it. That's a great advantage. Summarize the source, which will also help you understand it, and note passages you may want to quote or paraphrase when you write. Note also your own responses to the source. Where did you find yourself agreeing with it? Disagreeing? Wanting to say, *Yes, but . . . ?*

If you can't preserve your source and you don't know whether you will be able to access it later, you have a tougher choice. It takes too long to transcribe the exact words of every passage that's interesting or potentially useful, but it's a nuisance when you realize later that you want to quote something you only summarized. So when taking notes, you must choose as you go whether to quote, paraphrase, or summarize. In general, researchers in the humanities quote most often; social and natural scientists usually paraphrase and summarize. But every choice depends on how you plan to use your source:

Summarize when you need only the point of a passage, section, or even whole article or book. Summary is useful for context or views that are related but not specifically relevant. A summary of a source never serves as good evidence.

Paraphrase when the specific words of a passage are less important than its meaning. Paraphrasing doesn't mean changing just a word or two. You must

replace most of the words and phrasing of the original with your own. A paraphrase is never as good evidence as a direct quotation.

Record exact quotations for these purposes:

—The quoted words are evidence that backs up your reasons. If, for example, you claimed that different regions responded to the Battle of the Alamo differently, you would quote exact words from different newspapers. You would paraphrase them if you needed only their general sentiments.

—The words are from an authority you plan to rely on or challenge. —The words are strikingly original or so compelling that the quotation can frame the rest of your discussion.

—The source makes a claim that you disagree with, and to be fair you want to state that claim exactly.

Never abbreviate a quotation thinking you can accurately reconstruct it later. You can't. And if you misquote, you'll undermine your credibility.

6.6.4 Get the Context Right

Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context?

You can't record *everything*, but you have to record *enough* to ensure that you accurately capture the source's meaning. As you use material from your sources, record not just what they say but how they use the information.

When you quote, paraphrase, or summarize, be careful about context. You cannot entirely avoid quoting out of context, because you cannot quote all of an original. So when you draft a paraphrase or summary or copy a quotation, do so within the context that matters most —that of your own grasp of the original. When you record a part of an argument, note the line of reasoning that the author was pursuing:

> **NOT:** Bartolli (p. 123): The war was caused by Z.
>
> **NOT:** Bartolli (p. 123): The war was caused by X, Y, and Z.
>
> **BUT:** Bartolli: The war was caused by X, Y, and Z (p. 123). But the most important cause was Z (p. 123), for three reasons: reason 1 (pp. 124–26); reason 2 (p. 126); reason 3 (pp. 127–28).

Sometimes you will care only about the conclusion, but readers usually want to see how a conclusion emerges from the argument supporting it. So when you take notes, record not only conclusions but also the arguments that support them.

When you record a claim, note its role in the original. Is it a main point? A minor point? A qualification or concession? By noting these distinctions you avoid this kind of mistake:

> **ORIGINAL BY JONES:** "Researchers recognize that lung cancer has a number of causes, including genetic predisposition and exposure to environmental factors such as asbestos, radon, and fine particulates. But no one who has studied the data doubts that lung cancer's leading cause is smoking."
>
> **MISLEADING REPORT ABOUT JONES:** Smoking is just one cause of lung cancer among many. Jones, for example, claims that "lung cancer has a number of causes, including genetic predisposition and exposure to environmental factors such as asbestos, radon, and fine particulates."

Jones did not make that point at all. He *conceded* a point to set up the point he wanted to make. Anyone who deliberately misreports in this way violates basic standards of truth. But you can make such a mistake inadvertently if you note only a source's words and not their role in an argument.

To avoid such mistakes, distinguish statements that are central to an argument from qualifications or concessions that the author acknowledges but downplays. Unless you are reading "against the grain" of the writer's intention—to expose hidden tendencies, for example—do not report minor aspects of a source as though they were major or, worse, as if they were the source's whole point.

3. Record the scope and confidence of a claim. These are not the same:

> Chemicals in french fries cause cancer.
>
> Chemicals in french fries may be a factor in causing cancer.
>
> Some chemicals in french fries correlate with a higher incidence of some cancers.

Don't mistake a summary of another writer's views for those of an author summarizing them. Some writers do not clearly indicate when they summarize another's argument, so it is easy to quote them as saying what they set out to disprove rather than what they in fact believe.

Note why sources agree and disagree. Two social scientists might claim that a social problem is caused by personal factors, not by environmental forces, but one might cite evidence from genetic inheritance while the other points to religious beliefs. How and why sources agree is as important as the fact that they do. In the same way, sources might disagree because they interpret the same evidence differently or take different approaches to the problem.

It is risky to attach yourself to what any one researcher says about an issue. It is not "research" when you uncritically summarize another's work. Even if your source is universally trusted, be careful. If you rely on at least two sources, you'll usually find that they do not agree entirely, and that's where your own research can begin. *Which has the better argument? Which better respects the evidence?* In fact, you have a research problem right there— whom should we believe?

Facts within The Context.

Do the Fact Checking. Checking Facts, If they are correct or incorrect.

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:
   - Wikipedia
   - E-book
   - Books about autobiography and Biography
   - Websites
   - University
   - Books
   - Audiobooks
   - Handbooks
   - Dictionary
   - Cross References
   - Atlas
   - Commentaries
   - Articles
   - Journals
   - Newspapers
   - Websites

- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social

- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information

- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?
    -

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?
P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?

Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

6.7 Annotating Your Sources

6.7.1 Marginal Annotations

As an alternative to taking notes on paper or a computer, you can directly annotate many sources in print or digital form. Annotation is a technique of marking up a text through comments, questions, and cross-references to other texts. Annotating in the margins is generally more productive than simply highlighting because it brings into relief the relevance of a source to your project.

In annotating, you document the active reading practices discussed in this chapter. You can use annotations to identify a source's claims and keywords or "argue" with a source by questioning (or extending) its reasons, evidence, and warrants (see part III). As your project develops, you can return to an annotated text to see what you were thinking earlier.

Of course, not every text is equally available for annotation. You can't write in the margins of library books or other texts you do not own. Many texts are accessible only (or most conveniently) in digital form. Fortunately, however, there are digital annotation tools that let you document your reading in digital environments. You can use these tools to annotate a wide range of texts, including images, and to link your readings of various texts to create a searchable database for later retrieval.

> **The Value of Reading Widely**
>
> We have emphasized how important it is to have a good question to focus your research. Don't think, however, that you waste time reading sources that turn out to be irrelevant. In fact, when you read and record more than you use, you build up a base of knowledge crucial to the exercise of good thinking. Good thinking is a skill that you can learn, but you can exercise it only when you have a deep and wide base of knowledge to work on. So read sources not just to answer the question you ask today, but to help you think better about every question you'll ask for the rest of your research career. To that end, everything you read is relevant.

6.7.2 Annotated Bibliography

One approach to engaging sources is an annotated bibliography—a list of possible sources featuring both a citation and a brief descriptive summary of each source. (For more on citations, see 14.5.) There are multiple types of annotations based on the motive for creating them. For a research project, an annotated bibliography offers a bird's-eye view of a range of sources and the roles they might play in your paper. Often the

assembling of an annotated bibliography is a distinct stage in a research process, one that allows you (and your teacher) to reflect on the sources you have collected. Each annotation is an opportunity to evaluate the credibility of a source, summarize its argument, and explain its relevance to your project.

Compiling an annotated bibliography can serve as a checkpoint to gauge how thoroughly you have conducted your research and how deeply you have engaged the sources you have collected. If you can't summarize your sources or explain their relevance, you are likely not ready to write your paper.

Quick Tip: Manage Moments of Normal Anxiety

As you get deeper into your project, you may experience a moment when everything seems to run together into a hopeless muddle. That usually happens when you accumulate notes faster than you can sort them. Such moments can be stressful, but they can also be a sign that you are on the verge of a new insight or discovery.

You can minimize the panic by taking every opportunity to organize and summarize what you have gathered by *writing as you go* and by returning to the central questions: *What question am I asking? What problem am I posing?* Keep rehearsing that formula, *I am working on X to learn more about Y, so that my readers can better understand Z.* Writing regularly about these questions does more than help you stay focused; it also helps you think.

You can also turn to friends, classmates, teachers—anyone who will serve as a sympathetic but critical audience. Explain how what you have learned bears on your question and helps you resolve your problem. Ask them, *Does this make sense? Am I missing anything important? What else would you like to know?* You will profit from their reactions, but even more from the mere act of explaining your ideas to non-specialists.

Checking Each Fact's Sources, If they Are Reliable or Unreliable.

Sources the author used

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Is the Source Reliable or Unreliable?

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?

4. Is the primary source reliable, fair, ethical and trustworthy?
5. Is the primary source sloppy, biased, unethical?
6. Is the primary source objective when they speaking about certain subject?
7. Are the primary source present facts carefully or careless?
8. Is the primary source truthfully presenting the facts, opinions and data?
9. Who is the writer? Is he /she qualified expert to write about this topic?
10. Did the write done proper research regarding the topic?
11. What is the tone?
12. What is the purpose of publication?
13. What assumption does the author make?
14. What are the bases of author's conclusions?
15. Does the author agree or disagree with other authors on the subject?
16. Was this written in regards of the counterargument other authors who have opposite views?
17. Does the content agree or disagree with author/authors on the subject?
18. Does the content agree or disagree with what you know or have learned about the issue?
19. Where was the source made?
20. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.
    34. Eyewitness.

35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website

8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

PART III

Making an Argument

Prologue

Assembling a Research Argument

You can't wait to plan your argument until after you've gathered every last bit of data and found every last relevant source. In the first place, you'll never get them all. In the second, you'll end up researching mechanically or aimlessly, accumulating more and more stuff with no sense of what you'll do with it or following trails of bread crumbs who knows where. Of course, you have to do some research to get a handle on your project. But as soon as you have a sense of your problem and its likely solution, you should begin planning your argument. Your plan will change as your research progresses —if it doesn't, you probably aren't doing your best thinking—but making a plan early and modifying it as you go will help you grasp your material better and research more purposefully: only when you try to make a *research argument* that answers your readers' predictable questions can you see what research you have yet to do.

A research argument is not like the heated exchanges we hear every day. Those arguments usually involve a dispute: children argue over a toy, roommates over what music to play, drivers over who had the right-of-way. Such arguments can be polite or nasty, but most involve conflict, with winners and losers. To be sure, researchers sometimes wrangle over each other's reasoning and evidence and occasionally erupt into charges of carelessness, incompetence, and even fraud. But that kind of argument is not what made them researchers in the first place.

In the next five chapters, we examine a kind of argument that is less like a prickly dispute with winners and losers and more like a lively conversation with amiable and sometimes skeptical colleagues. It is a conversation in which you and your imagined readers *cooperatively* explore an issue that you both think is important to resolve, a conversation that aims not at coercing each other into agreement, but at cooperatively finding the best answer to an important but challenging question.

Getting to Know You

You've been told endlessly to think about your audience, but nothing is harder than imagining questions from someone you don't know. Experienced researchers have the advantage of knowing many of their readers personally. They talk with them about research projects, trying out ideas before writing them up. If you are a beginning researcher or a student, you may not yet know your readers in this personal way. But you can do some homework to understand how they write, argue, and think:

- Read journals that publish research like yours. Notice the kinds of questions the articles acknowledge and respond to.
- Rehearse your argument with a more experienced researcher or a teacher. After you have a plan but before you draft, talk over your ideas, asking whether any seem doubtful or confusing.
- Ask a few people you trust to read your drafts and indicate where they have questions or see alternatives. Find people as much like your intended readers as possible.

You can even try to get to know some actual readers. For example, a group of physicists once wanted biologists to notice their research but were unhappy when the first manuscript they sent to a biology journal was rejected. So they started attending biology conferences, reading biology journals, even hanging around the biology department's faculty lounge. After they figured out how biologists think, they rewrote their arguments and published papers that influenced the field. You may not be able to travel to conferences or hang out in a faculty lounge, but you can still get to know faculty and students on your campus working in your field. The better you know them, the better you will be able to imagine questions they might ask you.

In that conversation, though, you do more than politely trade opinions. We are all entitled to our opinions, and no law requires us to explain or defend them. But in a research argument, we are expected to show readers why our claims are important and then to support our claims with good reasons and evidence, as if our readers were asking us, quite reasonably, *Why should I believe that?*

In fact, although we more easily notice the heated disputes, we have these collaborative arguments every day, each time we trade good reasons for deciding what to do—when discussing with a friend what cell phone to buy, what books to read, even whether to get pizza or Chinese food. Like those friendly discussions, a research argument doesn't force a claim on readers. Instead, you start where your readers do, with their predictable questions about why they should accept your claim, questions they ask not to sabotage your argument but to test it, to help both of you find and understand a truth worth sharing. Of course, when you *write* an argument, no one is there to ask you those questions in person. So you must imagine them on your readers' behalf. It's those imagined questions and your answers that make your argument part of an ongoing conversation. In chapter 7 we survey the elements that constitute a research argument. In chapters 8–11 we explain each element in detail. In part IV, we show you how to put that argument into writing.

7 Making Good Arguments

Use Logic.

Use Grammar.

Use Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:
   - Critical Discourse Analysis_ The Critical Study of Language.
   - Discourse analysis.
   - The Routledge handbook of discourse analysis.

An Overview

> In this chapter, we explain what a research argument is and the five questions whose answers constitute one.

In part II, we argued that real research involves more than just amassing information on a topic; we argued that it means developing solutions to problems you and your readers care about. Likewise, sharing the results of your research involves more than just giving your readers a "data dump" that says, *Here are some facts about my topic*; it means explaining your problem and justifying your solution in a *research argument.*

7.1 ARGUMENT AS A CONVERSATION WITH READERS

In a research argument, you make a *claim*, back it with *reasons* supported by *evidence*, *acknowledge* and *respond* to other views, and sometimes explain your *principles* of reasoning. There's nothing arcane about these things: you do them in every conversation that inquires thoughtfully into an unsettled issue:

> **Abby:** I hear last semester was a little rocky. How do you think this term will go? [*Abby poses a problem that interests her, put in the form of a question.*]
>
> **Brett:** Better, I hope. [*Brett makes a claim that answers the question.*]
>
> **Abby:** Why is that? [*Abby asks for a reason to believe Brett's claim.*]
>
> **Brett:** I'll finally be taking courses in my major. [*Brett offers a reason.*]
>
> **Abby:** Why will that make a difference? [*Abby doesn't see how Brett's reason is relevant to his claim that he will do better.*]

Brett: When I take courses I'm interested in, I work harder. [*Brett offers a general principle that relates his reason to his claim.*]

Abby: What courses? [*Abby asks for evidence to back up Brett's reason.*]

Brett: History of architecture, introduction to design. [*Brett offers specific instances on which he based his reason.*]

Abby: But what about that calculus course you have to take again? [*Abby offers a point that contradicts Brett's reason.*]

Brett: I know I had to drop it last time, but I found a really good tutor. [*Brett acknowledges Abby's objection and responds to it.*]

Abby: But won't you be taking five courses? [*Abby raises another reservation.*]

Brett: I know. It won't be easy. [*Brett concedes a point he cannot refute.*]

Abby: Will you pull up your GPA? [*Abby asks about the limits of Brett's claim.*]

Brett: I should. I'm hoping for a 3.0, as long as I don't have to get a part-time job. [*Brett limits the scope of his claim and adds a condition.*]

If you can imagine yourself in that conversation, you'll find nothing strange about assembling a research argument. That's because the five elements of any argument are just answers to the kinds of questions Abby asks Brett—and that you must ask yourself on your reader's behalf:

Claim: What do you want me to believe? What's your point?

Reasons: Why do you say that? Why should I agree?

Evidence: How do you know? Can you back it up?

Acknowledgment and Response: But what about . . . ?

Warrant: How does that follow? What's your logic? Can you explain your reasoning?

In fact, you can think of your research as the process of figuring out answers to these questions.

7.2 SUPPORTING YOUR CLAIM

At the core of every research argument is the answer to your research question, the solution to your problem—your main claim. You have to back up that claim with two kinds of support: reasons and evidence.

7.2.1 Support Claims with Reasons

The first kind of support, a reason, is a statement that leads readers to accept your claim. We often join a reason to a claim with *because*:Elementary schools should make teaching foreign languages a priority*claim* because we acquire languages best and most easily when we are young.*reason*

Clarifying Some Terms

So far, we've used two terms to name the statement that sums up the results of your research. In the context of questions, we called it your *answer.* In the context of problems, we called it your *solution*. Now in the context of an argument, we'll call it your *claim.*

> A *claim* is an assertion (which can be a single sentence or more) that demands support: *Climate change is threatening coastal cities; Toni Morrison's most important novel is* Beloved. Your *main claim* is the assertion your whole research argument supports. Some call this assertion your *thesis*.
>
> A *reason* is an assertion that supports a claim: *[Because] climate change is causing ocean levels to rise; [Because] in* Beloved, *Morrison's major themes find their fullest development.*
>
> *Evidence* is data deployed to support a reason. Unlike a claim or a reason, evidence is not always framed as an assertion: a data table documenting rising ocean levels over the past decade or quotations from *Beloved* illustrating Morrison's major themes would be forms of evidence.

These terms can be confusing, because a reason is also a subclaim that can be supported by more reasons and because both reasons and evidence are kinds of support. But if you stick with us, you'll see why these distinctions are important.

You often need more than one reason to support a claim, and in a complex argument, your reasons themselves will usually require further support:

> Elementary schools should make teaching foreign languages a priority*claim 1* because we acquire languages best and most easily when we are young.*reason 1 supporting claim 1/ claim 2* In fact, those who begin second languages as adults rarely attain the level of fluency of those who learn them as children.*reason 2 supporting reason 1 and claim 2/claim 3* Teaching foreign languages at the elementary-school level also contributes to children's ethical development,*reason 3 supporting claim 1/claim 4* because it fosters an awareness of cultures and societies beyond their own.*reason 4 supporting reason 3 and claim 4/claim 5.*

7.2.2 Base Reasons on Evidence

The second kind of support is the evidence on which you base your reasons. We've said that reasons can be supported by still more reasons, but these chains don't go on forever. Eventually you have to show some data. That's your evidence. This distinction between reasons and evidence can seem just a matter of semantics, and in some contexts the words do seem interchangeable:

> You have to base your claim on good reasons.
>
> You have to base your claim on good evidence.

But they are not synonyms, and distinguishing them is crucial in making sound arguments. Compare these two sentences:

> What evidence do you base your reason on?
>
> What reason do you base your evidence on?

That second sentence seems odd: we don't base evidence on reasons; we base reasons on evidence.

There are other differences:

> We use our minds to think up reasons.
>
> We have to search for evidence "out there" in the world, then make it available for everyone to see.

It makes no sense to ask, *Where do I go to see your reasons?* It does make sense to ask, *Where do I go to see your evidence?*

In casual conversation, we usually support a claim with just a reason:

> We should leave.*claim* It looks like rain.*reason*

Few ask, *What's your evidence that it looks like rain?* But when you address serious issues, readers expect you to base each reason on its own foundation of evidence, because careful readers don't accept reasons at face value. They ask for the evidence, the data, the facts on which you base those reasons:

> Elementary schools should make teaching foreign languages a priority*claim 1* because we acquire languages best and most easily when we are young.*reason 1 supporting claim 1/ claim 2* In fact, those who begin second languages as adults rarely attain the level of fluency of those who learn them as children.*reason 2 supporting reason 1/claim 3* In a study of over one hundred second-language learners, Jones (2013) identified an inverse correlation between second-language proficiency and . . . (see table 1).*evidence supporting*
>
> *reason 2*

With reasons and evidence, we have the core of a research argument:

But in most cases, this core alone isn't enough: you also have to flesh out your research argument by *acknowledging and responding* to other points of view and, sometimes, by offering *warrants* that show how a reason is *relevant* to a claim.

7.3 ACKNOWLEDGING AND RESPONDING TO ANTICIPATED QUESTIONS AND OBJECTIONS

Careful readers will question *every* part of your argument, so you must anticipate as many of their questions as you can, and then acknowledge and respond to the most important ones. For example, when readers consider the claim that schools should make foreign-language instruction a priority, they may wonder if doing that might detract from the teaching of other subjects. If you think readers might ask that question, you would be wise to acknowledge and respond to it:

> Elementary schools should make foreign languages a priority*claim 1* because we acquire languages best and most easily when we are young.*reason 1 supporting claim 1/claim 2* . . . Of course, if schools increase the attention they give to foreign languages, quality of instruction in other subjects might decline.*acknowledgment* But little evidence exists to support that fear and much dispels it. . . .*response*

The challenge all researchers face, however, is not just responding to readers' questions, alternatives, and objections, but imagining them in the first place. (We'll address that issue in chapter 10.)

Since no research argument is complete without acknowledgments and responses, we add them to our diagram to show how they relate to all the other parts of an argument:

7.4 CONNECTING CLAIMS AND REASONS WITH WARRANTS

Even when your readers agree that a reason is true, they may still object that it's not *relevant* to your claim. Consider this argument:

> We are facing significantly higher health care costs in Europe and North America*claim* because climate change is moving the line of extended hard freezes steadily northward.*reason*

Readers might accept the *truth* of that reason but question its *relevance* to the claim, asking: *What do higher health costs have to do with hard freezes? I don't see the connection.* To answer, you must offer a *general* principle that justifies relating your *particular* reason to your *particular* claim:

> When an area has fewer hard freezes, it must pay more to combat new diseases carried by subtropical insects no longer killed by those freezes.

Like all warrants, this one says that if a general circumstance exists (an area has fewer hard freezes), then we can infer a general consequence (that area will have higher costs to combat new diseases). The logic behind all warrants is that if a generalization is true or reasonable, then so must be specific instances of it.

But for that logic to work, readers must agree with four things. Two are easy to understand:

The warrant is true or reasonable: fewer hard freezes in fact mean higher medical costs.

The reason is true or reasonable: hard freezes in fact are moving north.

The next two are more difficult:

The specific circumstance in the reason qualifies as a *plausible instance* of the general circumstance in the warrant.

The specific consequence in the claim qualifies as a *plausible instance* of the general consequence in the warrant.

We can illustrate that logic like this: As we'll see, it's not easy to decide when you even need a warrant. Experienced researchers usually state them on only two occasions: when they think readers in their fields might ask how a reason is relevant to a claim or when they are explaining their fields' ways of reasoning to general readers. If you think your readers might not see the connection between a claim and reason, you must add a warrant to justify it:

> **When an area has fewer hard freezes, it can expect higher medical costs to cope with diseases carried by subtropical insects that do not survive freezes.***warrant* Europe and North America must thus expect higher health care costs*main claim* because climate change is moving the line of extended hard freezes steadily north.*reason* In the last one hundred years, the line of hard freezes lasting more than two weeks has moved north at the rate of roughly . . .*evidence*

We can add warrants to our diagram to show that they connect a claim and its supporting reason:

(We know this matter of warrants is not easy to grasp; we explain it again in more detail in chapter 11.)

7.5 BUILDING A COMPLEX ARGUMENT OUT OF SIMPLE ONES

Those five elements constitute a “basic” argument, but research arguments are more complex.

We almost always support a claim with two or more reasons, each of which must be supported by its own additional reasons and evidence and perhaps justified by its own warrant.

Since readers think of many alternatives and objections to any complex argument, careful researchers typically have to respond to a number of them.

Moreover, each reason, warrant, or response to an objection (all of which are statements or assertions) may itself have to be treated as a subclaim and supported by its own argument. Only the evidence “stands alone,” but even then you may have to explain where you got it, why you think it’s reliable, and how it supports your reason—and that may require yet another argument.

Cognitive Overload: Some Reassuring Words

It’s at about this point that many students new to research begin to feel overwhelmed. If so, your anxieties have less to do with your intelligence than with inexperience. One of us was explaining to teachers of legal writing how being a novice makes many first-year law students feel like incompetent writers. At the end of the talk, one woman reported that she had been a professor of anthropology whose published work was praised for the clarity of her writing. Then she switched careers and went to law school. She said that during her first six months, she wrote so incoherently that she feared she was suffering from a degenerative brain disease. Of course, she was not: she was going through the painful transition most of us experience when we try to write about matters we do not entirely understand for an audience we understand even less. She was relieved to find that the better she understood the law, the better she wrote about it.

If you feel overwhelmed, you can take comfort in that story, as did one reader who e-mailed us this:

> In *Craft of Research* you write about a woman who switched from anthropology to law and suddenly found herself unable to write clearly.
>
> After being an assistant professor of graphic design for five years, I recently switched to anthropology and suddenly found that writing anthropology papers is like pulling teeth. I thought to myself that I might have a degenerative brain disorder! I laughed out loud when I read about the anthropologist who switched to law. It made me feel a bit better.

And finally, most arguments also include background, definitions, explanations of issues that readers might not understand, and so on. If, for example, you were making an argument about the relationship between inflation and money supply to readers not familiar with economic theory, you would have to explain how economists understand those concepts. Serious arguments are complex constructions. (Chapters 8–11 explain them in detail.)

7.6 CREATING AN ETHOS BY THICKENING YOUR ARGUMENT

Readers judge your arguments not just by the reasons and evidence you offer but also by how well you anticipate and address their questions and concerns. By "thickening" your argument in this way, you earn the confidence of your readers, building up what is traditionally called your *ethos*: the character you project in your argument. Do you seem to be the sort of person who considers issues from all sides, who supports claims with evidence that readers accept, and who thoughtfully considers other points of view? Or do you seem to be someone who sees only one point of view and dismisses or even ignores the views of others?

When you acknowledge other views and explain your principles of reasoning in warrants, you give readers good reason to work *with* you in developing and testing new ideas. In the long run, the ethos you project in individual arguments hardens into your reputation, something every researcher must care about, because your reputation is the tacit sixth element in every argument you write. It answers the unspoken question, *Can I trust you?* That answer must be *Yes.*

Quick Tip: A Common Mistake—Falling Back on What You Know

If you are an inexperienced researcher, you may be tempted to rely too heavily on what feels familiar. For example, you might embrace a claim too early, perhaps even before you have done much research, because you "know" you can prove it. But falling back on that kind of certainty will just keep you from doing your best thinking. Being a researcher means allowing yourself to be surprised by your discoveries and insights. So when you start a project, begin not with a claim you know you can prove but with a problem you want to explore and solve.

Likewise, when you are new to a field, you may be tempted to rely on ways of arguing that are familiar to you from your education or experience. If, for example, you learned in a literature class how to present and analyze

quotations, do not assume that you can do the same in fields that emphasize "objective data," such as biology or experimental psychology. On the other hand, if as a biology or psychology major you learned to gather hard data and perform statistical analyses, do not assume that you can do the same in art history. This does not mean that what you learn in one class is useless in another. All fields share the elements of argument we describe here. But you have to learn what's distinctive in the way a field handles those elements and be flexible enough to adapt, trusting the skills you've learned.

And when you become familiar with your field, you may be tempted to oversimplify in a different way. When some beginning researchers succeed at making one kind of argument, they just keep making it over and over. Their mastery of one kind of complexity blinds them to another: they fail to see that their field, if it is an active one, is marked by competing methodologies, competing solutions, competing goals and objectives. Don't fall into this trap. If you've mastered one type of argument, try others: seek out alternative methods, formulate not only multiple solutions but multiple ways of supporting them, ask whether others would approach your problem differently.

When you are new to a topic or a field, you need ways to manage the complexity of new ideas and new ways of thinking. But guard against uncritically imposing familiar methods on new problems. As you learn more, you'll recognize that things are neither as blindingly complex as you first feared nor as simple as you then hoped.

8 Making Claims

> In this chapter, we discuss how to recognize the kind of claim that answers your research question and how to tell if your claim is specific and significant enough to serve as the main point of your argument.

You need a tentative answer to your research question to focus your search for evidence that will test and support its answer. As you test it, you will likely revise it, but as you assemble your argument, you must understand the kind of claim you are making. You must also be sure that your claim is not just sound, but significant enough to need an argument in the first place. Ask yourself three questions:

> What kind of claim should I make?
>
> Is it specific enough?
>
> Will my readers think it is significant enough to need an argument supporting it?

When you can answer those three questions, you're ready to assemble your argument.

8.1 DETERMINING THE KIND OF CLAIM YOU SHOULD MAKE

The kind of problem you pose determines the kind of claim you make and the kind of argument you need to support it. As we saw in chapter 4, academic researchers usually pose not *practical* problems but *conceptual* ones, the kind whose solution asks readers not to *act* but to *understand*:

> The Great Recession of 2008–2011 was caused largely by negligent financial regulation that let banks take on too much risk.

8.1.1 Making Conceptual Claims

Beyond distinguishing between practical and conceptual claims, it is useful to recognize that claims address a range of questions: *Does a thing or a situation exist? If so, how should we characterize it? How did it get this way? Is it good or bad? What can or should be done about it?* Depending on the question or questions implicit in a claim, different

kinds of evidence will be required to support it. The claims you make on a topic will fall into one (or more) of the following classes:

- Claims of fact or existence:

  Average global temperatures have risen to unprecedented levels within the past decade.

- Claims of definition and classification:

  Birds, not reptiles, are the direct descendants of dinosaurs.

- Claims of cause and consequence:

  Exposure to asbestos is a leading contributor to lung cancer.

- Claims of evaluation or appraisal:

  Shakespeare's greatest comedy is *As You Like It.*

- Claims of action or policy:

  Pennsylvania should increase extraction fees on natural gas drilling to fund education.

The first four classes—fact, definition, cause, and value—concern conceptual claims. For claims of fact or existence, you must provide evidence that a situation is, in fact, as you characterize it. Claims of definition or classification depend on reasoning about similarities or differences that assigns an entity to some broader class or distinguishes it from other entities. Effective claims of evaluation or appraisal depend on criteria of judgment to justify why something is good or bad (or better or worse than something else). Finally, claims of cause or consequence connect sets of facts to show that some situation does (or doesn't) follow from or lead to another.

8.1.2 Making Practical Claims

A practical claim is one that argues for (or against) some action or policy. It is usually built from a chain of conceptual claims: one that demonstrates that a problem exists, another that shows what causes the problem, and still another that explains how doing what you propose will fix it. Readers may also expect you to explain the following:

Why your solution is feasible; how it can be implemented with reasonable time and effort.

Why it will cost less to implement than the cost of the problem.

Why it will not create a bigger problem than the one it solves.

Why it is cheaper or faster than alternative solutions—a claim often difficult to support.

If you advance a practical claim but don't make those four sub-arguments, your readers may reject your whole argument. So as you assemble your argument, be clear about the kinds of claims you are making, whether conceptual or practical. Don't inflate the importance of a conceptual claim by tacking on a practical action, at least not early in your paper. If you want to suggest a practical application of your conceptual claim, do so in your conclusion. There, you can offer it as an action worth considering without having to develop a case for it (we return to this in chapter 16).

8.2 EVALUATING YOUR CLAIM

We can't tell you how to find a good claim, but we can show you how to evaluate the one you have from the point of view of your readers. Above all, they expect your claim to be both specific and significant.

8.2.1 Make Your Claim Specific

Vague claims lead to vague arguments. The more specific your claim, the more it helps you plan your argument and keep your readers on track as they read it. You make a claim more specific through precise language and explicit logic.

Precise Language. Compare these two claims:

TV inflates estimates of crime rates.

Graphic reports of violence on local TV news lead regular viewers to overestimate by as much as 150 percent both the rate of crime in their neighborhood and the personal danger to themselves and their families.

The first claim is so vague that we have little idea about what's to come. The second has more specific concepts that not only help readers understand the claim more clearly, but also give the writer a richer set of concepts to develop in what follows. Indeed, the precision of the claim signals how the argument is likely to proceed.

We do *not* recommend long, wordy claims for their own sake. But you benefit when you include in early versions of your claim more terms than you might ultimately use. That final claim should be only as specific as your readers need and should include only those concepts that you develop as themes in your argument.

Explicit Logic. You can also be explicit in the logic of your claim. Even with its relatively precise language, this claim offers only a single proposition:

> Regular TV viewers overestimate both the rate of crime in their neighborhood and the personal danger to themselves and their families.

In the natural and social sciences, claims like that are common, even preferred. But in the humanities, such a claim might seem a bit thin. As you draft your working claim, try elaborating its logic in two ways:

> Introduce it with a qualifying clause beginning with *although* or *even though.*
> Conclude it with a reason-clause beginning with *because.*

For example:

> **Although violent crime is actually decreasing,** regular TV viewers overestimate their neighborhood crime rate by 150 percent and therefore misjudge personal danger to themselves and their families **because local TV evening news regularly opens with graphic reports of mayhem and murder in familiar locations, making many believe that crime happens nightly outside their front door.**

While that claim may seem overwritten, it foreshadows three of the five elements that you need for a full argument: (1) *Although I acknowledge X,* (2) *I claim Y* (3) *because of reason Z.*

You can use an introductory *although* clause to acknowledge three kinds of alternative views:

• Something that your readers believe but your claim challenges:

> Although most people believe they are good judges of their security, regular TV viewers overestimate . . .

• A point of view that conflicts with yours:

> Although many security professionals see fear as the best motivation for safety precautions, regular TV viewers overestimate . . .

• A condition that limits the scope or confidence of your claim:

> Although it is difficult to gauge their real feelings about personal security, regular TV viewers overestimate . . .

If readers might think of those qualifications, acknowledge them first. You not only imply that you understand their views, but commit yourself to

responding to them in the course of your argument.

When you add a final *because* clause, you forecast some of the reasons that support your claim:

> Although many believe that school uniforms help lower the incidence of violence in public schools,*qualification* the evidence is at best weak*claim*
>
> **because researchers have not controlled for other measures that have been instituted at the same time as uniforms***reason 1* **and because the data reported are statistically suspect.***reason 2*

Again, we don't suggest that your final draft should offer a claim as bloated as these. But the richer your *working* claim, the more satisfying your argument is likely to be.

8.2.2 Make Your Claim Significant

After the specificity of a claim, readers look most closely at its *significance*, a quality they measure by how much it asks them to change what they think. While we can't quantify significance, we can roughly estimate it: *if readers accept a claim, how many other beliefs must they change?* The most significant claims ask a research community to change its deepest beliefs (and it will resist such claims accordingly).

Some research communities consider a claim significant enough if it asks them only to accept new evidence on a topic of common interest:

> I describe here six thirteenth-century Latin grammars of the Welsh language. Found just recently, these grammars are the only examples of their kind. They help us better appreciate the range of grammars written in the medieval period.

(Recall those reels of newly discovered film in 2.3.3.)

Readers value research more highly when it not only offers new data but *uses* those data to settle what seems puzzling, inconsistent, or otherwise problematic:

> There has been a long debate about how fluctuations in consumer confidence affect the stock market, but new statistical tools suggest little relationship between . . .

But readers value most highly when new facts or conjectures *upset* what seems long settled:

> It has long been an article of faith in modern physics that the speed of light is constant everywhere at all times, under all conditions, but new data suggest it might not be.

A claim like that would be contested by legions of physicists because if true, it would mean that physicists would have to change their minds not just about the speed of light but about lots of other things as well.

Early in your career, you won't be expected to know what those in a field think should (or even could) be revised. But you can still gauge the significance of your claim by asking how strongly readers might *contest* it. One way to do that is by considering *opposite* claims:

> Hamlet is not a superficial character.

> This report summarizes recent research on the disappearance of bees.

To assess how much either claim is worth contesting, change an affirmative claim into a negative one and vice versa:

Hamlet *is* a superficial character.

This report does *not* summarize recent research on the disappearance of bees.

If the reverse of a claim seems obviously false (like the first one) or trivial (like the second), then readers are likely to think the original claim is not worth an argument. (Of course, some great thinkers have successfully contradicted apparently self-evident claims, as Copernicus did when he asserted foolishly—or so it seemed at the time—that *the sun does* not *go around the earth.*)

If you are an advanced researcher, you measure the significance of your claim by how much it changes what your community thinks and how it does its research. Few discoveries have been as significant as Crick and Watson's structure of DNA. Not only did it make biologists think about genetics differently, but it opened up new lines of research.

But you don't have to make big claims to make a useful contribution: small findings can open up new lines of thinking. If, for example, you discovered that Abraham Lincoln read some obscure philosopher, historians would comb Lincoln's texts for traces of that influence.

If you are new to research, of course, your claim doesn't have to challenge the experts, just impress your teacher. If you can't predict whether it will, imagine your reader is someone like yourself. What did *you* think before you began your research? How much has your claim changed what *you* now think? What do *you* understand now that you didn't before? That's the best way to prepare for readers who will someday ask you the most devastating question any researcher can face: not *Why should I believe this?* but *Why should I care?*

8.3 QUALIFYING CLAIMS TO ENHANCE YOUR CREDIBILITY

Some new researchers think their claims are most credible when they are stated most forcefully. But nothing damages your ethos more than arrogant certainty. As paradoxical as it seems, you make your argument stronger and more credible by modestly acknowledging its limits. You gain the trust of your readers when you acknowledge and respond to their views, showing that you have not only understood but considered their position (for more, see chapter 10). But you can lose that trust if you then make claims that overreach. Limit your claims to what your argument can actually support by qualifying their scope and certainty.

8.3.1 Acknowledge Limiting Conditions Every claim has limiting conditions:

> We conclude that the epicenter of the earthquake was fifty miles southwest of Tokyo, **assuming the instrumentation was accurately calibrated.**
>
> We believe that aviation manufacturing will not match its late twentieth-century levels, **unless new global conflicts increase military spending.**

But every claim is subject to countless conditions, so mention only those that readers might plausibly think of. Scientists rarely acknowledge that their claims depend on the accuracy of their instruments, because everyone expects them to ensure that they are. But economists often acknowledge limits on their claims, both because their predictions are subject to changing conditions and because readers want to know which conditions to watch for.

Consider mentioning important limiting conditions even if you feel readers would not think of them. For example, in this next example, the writer not only shows that she was careful but gives a fuller and more accurate statement of the claim:

> Today Franklin D. Roosevelt is revered as one of our most admired historical figures, but toward the end of his second term, he was quite unpopular, **at least among certain segments of American society.***claim* Newspapers, for example, attacked him for promoting socialism, a sign that
>
> a modern administration is in trouble. In 1938, 70 percent of Midwest newspapers accused him of wanting the government to manage the banking system. . . . Some

have argued otherwise, including Nicholson (1983, 1992) and Wiggins (1973), both of whom offer anecdotal reports that Roosevelt was always in high regard,*acknowledgment* but these reports are supported only by the memories of those who had an interest in deifying FDR.*response*

Unless it can be shown that the newspapers critical of Roosevelt were controlled by special interests,*limitation on claim* their attacks demonstrate significant popular dissatisfaction with Roosevelt's presidency.*restatement of claim*

8.3.2 Use Hedges to Limit Certainty

Only rarely can we state in good conscience that we are 100 percent certain that our claims are unqualifiedly true. Careful writers qualify their certainty with words and phrases called *hedges*. For example, if anyone was entitled to be assertive, it was Crick and Watson, the discoverers of the helical structure of DNA. But when they announced their discovery, they hedged the certainty of their claims (hedges are boldfaced; the introduction is condensed):

> We **wish to suggest a** [note: not *state the*] structure for the salt of deoxyribose nucleic acid (D.N.A.). . . . A structure for nucleic acid has already been proposed by Pauling and Corey. . . . **In our opinion,** this structure is unsatisfactory for two reasons: (1) **We believe** that the material which gives the X-ray diagrams is the salt, not the free acid. . . . (2) **Some** of the van der Waals distances **appear** to be too small. (J. D. Watson and F. H. C. Crick, "Molecular Structure of Nucleic Acids")

Without the hedges, Crick and Watson would be more concise but more aggressive. Compare that cautious passage with this more forceful version (much of the aggressive tone comes from the *lack* of qualification):

> We **announce** here **the** structure for the salt of deoxyribose nucleic acid (D.N.A.). . . . A structure for nucleic acid has already been proposed by Pauling and Corey. . . . Their structure **is** unsatisfactory for two reasons: (1) The material which gives their X-ray diagrams is the salt, not the free acid. . . . (2) Their van der Waals distances **are** too small.

Of course, if you hedge too much, you will seem timid or uncertain. But in most fields, readers distrust flatfooted certainty expressed in words like *all*,

no one, *every*, *always*, *never*, and so on. Some teachers say they object to all hedging, but what most of them really reject are hedges that qualify every trivial claim. And some fields do tend to use fewer hedges than others. It takes a deft touch. Hedge too much and you seem mealy-mouthed; hedge too little and you can seem overconfident. Unfortunately, the line between the two is thin. So watch how those in your field manage uncertainty and do likewise.

9 Assembling Reasons and Evidence

> In this chapter, we discuss two kinds of support for a claim: reasons and evidence. We show you how to distinguish between the two, how to use reasons to organize your argument, and how to evaluate the quality of your evidence.

Readers look first for the core of an argument, a claim and its support. They look particularly at its set of reasons to judge its plausibility and their order to judge its logic. If they think those reasons make sense, they will look at the evidence you present, the bedrock of every argument. If they don't believe the evidence, they'll reject the reasons and, with them, your claim.

So as you assemble your argument, you must offer readers a plausible set of reasons, in a clear, logical order, based on evidence they will accept. This chapter shows you how to do that.

9.1 USING REASONS TO PLAN YOUR ARGUMENT

When you order your reasons, you build a logical structure for your argument. To test that structure, you can make a traditional outline or visualize your plan in other ways. You might find it useful to create a chart-like outline known as a "storyboard." To start a storyboard, write your main claim and each reason (and subreasons) at the top of separate index cards or pages. Then below each reason (or subreason), list the evidence that supports it. If you don't have the evidence yet, note the *kind* of evidence you'll need. Finally, arrange the pages or index cards on a table or wall to make their logical relationships visible at a glance.

Read just the reasons, not the details, to see if that order makes sense. If it doesn't, try out different orders until it does. At this point, you are outlining only your argument, not

your paper. When you turn to a first draft, you will reconsider your reasons in light of your readers' understanding (and yours) and perhaps arrange a new order (for more on ordering parts, see 12.1.3).

9.2 DISTINGUISHING EVIDENCE FROM REASONS

Once you've arranged your reasons in a plausible order, be sure you have sufficient evidence to support each one. Readers will not accept a reason until they see it anchored in what *they* consider to be a bedrock of established fact. The problem is, you don't get to decide that; your readers *do*. To count as evidence, a statement must report something that readers agree not to question, at least for the purposes of the argument. But if they do question it, what you think is hard factual evidence is for them only a reason, and you have not yet reached that bedrock of evidence on which your argument must rest.

Consider this argument:

> American higher education must curb escalating tuition costs,*claim* because the price of college is becoming an impediment to realizing the American dream.*reason* **Today a majority of students leave college with a crushing debt burden**.*evidence*

In that last sentence, the writer offers what she believes is a "fact" hard enough to serve as evidence to support her reason.

But a skeptical reader might ask, *That's just a generalization. What hard numbers do you have to back up "a majority of students" or "crushing debt burden"?* Such a reader treats that statement not as an unquestioned fact but as a soft reason still in need of hard evidence. The writer would have to add something like this:

> In 2013, nearly 70 percent of students borrowed money for college with loans averaging $30,000, a debt that prevents many from buying a home, beginning a family, or pursuing a higher degree.*evidence*

Of course a *really* skeptical reader could again ask, *What backs up those numbers? What justifies the claim that this situation is a crisis?* If so, the writer would have to provide still harder data, breaking down those numbers to document the consequences of debt for recent graduates. If she did her own research, she could show her raw data. If she found her data in a secondary source, she could cite it, but she might then be asked to prove that her source is reliable. Really skeptical readers just never give up.

If you can imagine readers plausibly asking, not once but many times, *How do you know that? What facts make it true?*, you have not yet reached what readers want—a bedrock of uncontested evidence. And at a time when so-called experts are quick to tell us what to do and think based on studies whose data we never see, careful readers have learned to view reports of evidence skeptically. Even when you think you have good evidence, be clear how it was collected and by whom. If it was collected by others, find and cite a source as close to the evidence as you can get.

Our Foundational Metaphors for Evidence

When we talk about evidence, we typically use foundational metaphors: good evidence is *solid*, *hard*, *the bedrock foundation* on which we *build* arguments, something we can *see for ourselves*. Bad evidence is *flimsy*, *weak*, or *thin.* Language like that encourages readers to think of evidence as a reality independent of anyone's interpretation and judgment. But data are always constructed and shaped by those who collect and use them as evidence. As you build your argument, keep in mind that your evidence will *count* as evidence only if your readers accept it without question, at least for the moment.

9.3 DISTINGUISHING EVIDENCE FROM REPORTS OF IT

Now a complication: researchers rarely include in any report *the evidence itself*. Even if you collect your own data, counting rabbits in a field or interviewing the unemployed, your paper can only *refer to* or *represent* those rabbits and unemployed in words, numbers, tables, graphs, pictures, and so on. For example, when a prosecutor says in court, *Jones was a drug dealer, and here is the evidence to prove it*, he can hold up a bag of cocaine, even let jurors hold it in their own hands. (Of course, both he and the jurors must believe the officer who says it's the same bag he took from Jones and the chemist who says that the white stuff really is cocaine.) But when he *writes* a brief on the case, he cannot staple that bag to the page; he can only refer to or describe it.

In the same way, researchers cannot share with their readers "the evidence itself." For example:

> Emotions play a larger role in rationality than many think.*claim* In fact, without the emotional centers of the brain, we could not make rational decisions.*reason 1 supporting claim* Persons whose brains have suffered physical damage to their emotional

centers cannot make the simplest decisions.*reason 2 supporting reason 1* For example, consider the case of Mr. Y,
who . . .*report of evidence*

That argument doesn't offer as evidence real people with damaged brains; it can only report observations of their behavior, copies of their brain scans, tables of their reaction times, and so on. (In fact, we prefer to read reports of others than to have to test brains and read MRI scans ourselves.)

We know this distinction between evidence and reports of evidence must seem like a fine one, but it emphasizes two important issues. First, data you take from a source have invariably been shaped by that source, not to misrepresent them, but to put them in a form that serves that source's ends. For example, suppose you want to show that the cult of celebrity distorts rational compensation, and you need evidence that athletes and entertainers are paid far more than top doctors, generals, and government officials. You could find government salaries in official reports. But unless you can peek at the tax returns of Oprah and Tiger Woods (and who knows how reliable they
would be), you would have to depend on reports of those incomes that may or may not have been systematically collected and compiled from still more distant reports. Unless you can talk to those who counted, organized, and reported the original data, you'll be at three or four removes from the evidence itself before you use it for your own purposes. (And at least one reporter in that chain of reports almost certainly miscopied some of the data.)

Second, when you in turn report those data as your own evidence, you cannot avoid manipulating them once again, at least by putting them in a new context. Even if you collected the data yourself, you tidied them up, making them seem more coherent than what you actually saw, counted, and recorded in your notes. In fact, even before you started collecting any facts at all, you had to decide what to count, how to categorize the numbers, how to order them, whether to present them in the form of a table, bar chart, or graph. Even photographs and video recordings reflect a particular point of view. In short, facts are shaped by those who collect them and again by the intentions of those who use them.

This often squishy quality of reports of reports (of reports of reports) is why people who read lots of research are so demanding about the reliability of evidence. If you collect data

yourself, they'll want to know how you did it. If you depend on sources, they'll expect you to use primary sources, and if you didn't, to get as close to primary sources as you can. And they want complete citations and a bibliography so that they could, if they wanted to, look at your sources themselves. In short, they want to know that they can trust the complete chain of reports between what's "out there" and what they are reading.

Trusting Evidence Three Hundred Years Ago and Now

In the early days of experimental science, researchers conducted experiments before what they called "witnesses," reputable scientists who observed the experiments so that they could attest to the accuracy of the reported evidence. Researchers don't rely on witnesses anymore. Instead, each area of study has standardized its methodologies for collecting and reporting evidence to ensure that it is reliable (though some researchers still get away with fraud). When you observe the standard procedures in your field, you encourage readers to accept your evidence at your word,

without their needing to see it themselves. So as you read secondary sources, note the kind of evidence they cite, how they cite it, then do likewise. When in sociology, do as sociologists do.

We live in an age where we are all subjected to research reports and opinion surveys that are at best dubious and at worst faked, so you have to assure your readers that they can trust your data. The last link in that chain of credibility is you, so be thoughtful about whose data you use and how you use them.

9.4 EVALUATING YOUR EVIDENCE

Once you know the kind of evidence your readers expect, you must test the reliability of yours: is it *sufficient* and *representative*, reported *accurately* and *precisely*, and taken from an *authoritative* source? These are not exotic criteria unique to academic research. We all apply them in our most ordinary conversations, even with children. In the following, "Parent" faults "Child" on all those criteria:

> **Child:** I need new sneakers.*claim* Look. These are too small.*evidence*
>
> **Parent:** Your feet haven't grown that much in a month, and they don't seem to hurt you much [*i.e., your evidence could be relevant, but I reject it because it is not accurate and because even if it were accurate, "too small" is not sufficiently precise*].
>
> **Child:** But they're too grungy for school.*reason* Look at this dirt and these raggedy laces.*evidence*
>
> **Parent:** The dirt will wash off and the laces can be replaced. That's not enough to buy new sneakers [*i.e., you may be factually correct, but dirt and raggedy laces alone are not sufficient evidence that they are unfit for school*].
>
> **Child:** They hurt.*reason* Look at how I limp.*evidence*
>
> **Parent:** You were walking fine a minute ago [*i.e., your evidence is not representative*].
>
> **Child:** Everybody thinks I should get new sneakers.*reason* Harry said so.*evidence*
>
> **Parent:** Harry's opinion doesn't matter in this house [*i.e., Harry may have said that, but his opinions are not authoritative*].

Readers judge reports of evidence by the same criteria a parent uses with a child. They want evidence to be accurate, precise, sufficient, representative, and authoritative. (Readers also expect evidence to be *relevant*, but we'll discuss that in chapter 11.) As you assemble your evidence, screen it for those criteria before you add it to your storyboard.

9.4.1 Report Evidence Accurately

Careful readers are predisposed to be skeptical, so they will seize on the most

trivial mistake in your evidence as a sign of your unreliability in everything else. Whether your research argument depends on data collected in a lab, in the field, in the library, or

online, record those data completely and clearly, then double-check them before, as, and after you write them up. Getting the easy things right shows respect for your readers and is the best training for dealing with the hard things. You can sometimes use even questionable evidence, *if you acknowledge its dubious quality.* In fact, if you point to evidence that seems to support your claim but then reject it as unreliable, you show yourself to be cautious, self-critical, and thus trustworthy.

9.4.2 Be Appropriately Precise

Your readers want you to state your evidence precisely. They hear warning bells in words that hedge your claim in such a way that they cannot assess its substance:

> The Forest Service has spent **a great deal** of money to prevent forest fires, but there is still **a high probability** of **large, costly** ones.

How much money is *a great deal*? How probable is *a high probability*—30 percent? 80 percent? What counts as *large* and *costly*? Watch for words like *some*, *most*, *many*, *almost*, *often*, *usually*, *frequently*, *generally*, and so on. Such words can appropriately limit the breadth of a claim (see 8.3), but they can also fudge it if the researcher didn't work hard enough to get the precise numbers.

What counts as precise, however, differs by field. A physicist measures the life of quarks in fractions of a nanosecond, so the tolerable margin of error is vanishingly small. A historian gauging when the Soviet Union was at the point of collapse would estimate it in months. A paleontologist might date a new species give or take tens of thousands of years. According to the standards of their fields, all three are appropriately precise. (Evidence can also be too precise. Only a foolhardy historian would assert that the Soviet Union reached its point of inevitable collapse at 2:13 p.m. on August 18, 1987.)

9.4.3 Provide Sufficient, Representative Evidence

Beginners typically offer too little evidence. They think they prove a claim

with one quotation, one number, one personal experience (though sometimes only one bit of evidence is sufficient to *disprove* it). For example:

> Shakespeare must have hated women because those in *Hamlet* and *Macbeth* are evil or weak.

Readers need more than that to accept such a significant claim. Even if you offer lots of evidence, your readers still expect it to be

representative of the full range of variation in what's available. The women in one or two Shakespearean plays do not represent all his women, any more than Shakespeare represents all Elizabethan drama. Readers are especially wary when your evidence is a small sample from a large body of data, as in surveys. Whenever you use sampled data, not only must your data *be* representative, but you must *show* that it is.

A charge related to the claim that your evidence is unrepresentative is that it is *anecdotal*. It *might* be representative but, then again, it might not. If your claim depends on one or two examples, however well-chosen to be representative, there is a risk that your evidence will be dismissed as a form of cherry-picking. Of course, anecdotal evidence can be persuasive in ways that statistical representations of data are not. The very persuasiveness of the telling example, the case study, or the exception that proves the rule makes argument by anecdote attractive but also risky because an argument is only as strong as its evidence.

9.4.4 Consider the Weight of Authority

Different fields define and evaluate evidence differently. If you're a beginner, you'll need time to learn the kinds of evidence that readers in your field accept and reject. The most painful way to gain that experience is to be the object of their criticism. Less painful is to seek examples of arguments that failed because their evidence was judged unreliable. Listen to lectures and class discussions for the kinds of arguments that your instructors criticize because they think that the evidence is weak. Failed arguments help you understand what counts as reliable better than do successful ones.

A particular kind of weak evidence comes from sources that readers do not consider authoritative. Early in the twentieth century, New Yorkers accepted the word of a local newspaper: "If you see it in the *Sun,* it's so." In general, readers assign degrees of authority to sources based on their reputation for rigor and objectivity. For example, most people will accept data on the transmission of viruses that a researcher obtains from the U.S. Centers for Disease Control as credible evidence, even allowing for the possibility of error. However, evidence from *Wikipedia* will not be accepted in many circles because

Wikipedia is not regarded as authoritative. “Consider the source” is the skeptic’s rebuttal to evidence dismissed for lack of authority.

10 Acknowledgments and Responses

> An argument is not complete if it fails to recognize other points of view. This chapter shows how you can make your argument more convincing by acknowledging and responding to questions, objections, and alternatives your readers might raise.

The core of your argument is a claim backed by reasons based on evidence. You thicken it with more reasons, perhaps supporting each with additional subreasons and evidence. But if you give your readers only claims, reasons, and evidence—no matter how compelling these are to you—they may still find your argument thin or, worse, ignorant or dismissive of their views. To craft a successful argument, you must do more than assemble a sound edifice of claims, reasons, and evidence; you must also position those claims as contributions to an ongoing conversation in which your readers are invested (see chapter 7).

You can do this in your introduction by presenting your main claim as a solution to a problem your readers care about (we'll talk more about introductions in chapter 16). But you can do it throughout your argument as well by anticipating, acknowledging, and responding to questions, objections, and alternatives that your readers are likely to raise along the way. As you plan and draft your paper, your readers won't be there to question you or to offer their own views. So you have to *imagine* their questions and views and take them into account. That's how you establish a cooperative relationship with readers, by imagining yourself conversing with them.

In this chapter, we show you how to imagine and address two kinds of questions that readers may ask about your argument:

- They may question its *intrinsic* soundness by challenging the clarity of your claim, the relevance of your reasons, or the quality of your evidence.
- They may question its *extrinsic* soundness by asking you to consider alternatives—different ways of framing the problem, evidence you've overlooked, or what others have written on your topic.

When you anticipate, acknowledge, and respond to both kinds of questions, you create an argument that readers are more likely to trust and accept.

10.1 QUESTIONING YOUR ARGUMENT AS YOUR READERS WILL

When planning and drafting your argument, you may freeze up if you try from the outset to imagine every possible reaction to it. Therefore, focus first on what you yourself want to say, on the claims, reasons, and evidence that make up your argument's core. Once you have that core, try to imagine readers' responses to it. Doing this may be hard, because you know your own argument too well and may believe in it too much to seriously challenge it. If you can share the core of your argument with a friend, mentor, or colleague you trust, do it. That will help you identify questions, objections, and alternatives that other readers might raise. If you can't, then imagine a group of particularly skeptical hypothetical readers questioning your argument more sharply than you hope your actual readers will.

For this exercise, you might suspend your conception of argument as collaborative inquiry and imagine it not quite as warfare, but as something close to a warm debate. View your argument through the eyes of someone who has a stake in a different outcome, someone who *wants* you to be wrong.

First, examine your problem. Here are some questions with possible answers from an imagined reader:

> *Why do you think there's a problem at all?* "The costs or consequences of the situation you are responding to don't seem that significant."
> *Have you properly defined the problem? Is it practical or conceptual?* "Maybe the problem involves not the issue you raise but another one."

Then consider your solution:

> *Is your solution practical or conceptual? That is, does it ask readers to do something or to understand something? And does it match the problem (practical problems demand practical solutions; conceptual problems conceptual ones)?* "You explain what's wrong, but you don't say how we can change it." "You assert that our current understanding falls short, but you don't offer a new way of looking at the issue."
>
> *Have you stated your claim too strongly?* "I can think of exceptions and limitations."

5a. *Why is your practical solution better than others?* “I think that what you propose will cost too much and create new problems.”

5b. *Why is your conceptual solution better than others?* “It doesn’t seem to fit with all this other well-established knowledge.”

If you come up with a question that you can’t answer, decide whether you can find the answer before you go on. Don’t go easy on yourself with this one: the time to fix a problem with your argument is when you find it.

Note where your argument might seem weak but actually isn’t. If, for example, you anticipate that readers will think your solution has costs that it does not, you can defuse that concern by acknowledging and responding to it:

> It might seem that by focusing on the actions of specific banks, we are minimizing the systemic forces that contributed to the financial crisis, but, in fact, our case studies will show . . .

Next, question your support. Imagine a reader challenging your evidence.

A reader might question its nature:

> “I want to see a different *sort* of evidence—hard numbers, not anecdotes (or stories about real people, not cold numbers).”

If you present the right kind of evidence, a reader might still question its quality:

> “It isn’t accurate. The numbers don’t add up.”
>
> “It isn’t precise enough. What do you mean by ‘many’?”
>
> “It isn’t current. There’s newer research than this.”
>
> “It isn’t representative. You didn’t get data on all the groups.”
>
> “It isn’t authoritative. Smith is no expert on this matter.”

The toughest objection, however, is usually this one:

> “You need more evidence. One data point (quotation/number/anecdote) is not sufficient.”

Most researchers have difficulty finding enough good evidence to make a solid case, especially those working on short deadlines. But teachers grumble most about students who seem to think that the evidence they find first is all they need.

> Readers can be particularly skeptical when they have a stake in a solution that differs from yours. So if you feel your evidence is less than unassailable, you may want to admit its limitations candidly, before readers reject your argument because you overstated it.

Finally, readers may not see how your reasons support your claims, or how your claim follows from your reasons. We devote all of chapter 11 to this problem.

In sum, when assembling your argument, test your claims, reasons, and evidence as your most skeptical readers will—and even in ways they might not. You can then address at least the most important objections that you can imagine them raising. Show readers that you put your argument through your own wringer before they put it through theirs.

10.2 IMAGINING ALTERNATIVES TO YOUR ARGUMENT

When you recognize your own argument's limitations, you build credibility by showing readers that you are making an honest case and dealing with them fairly. But that's just a defensive move. You will seem even more credible if you show not just that you understand the strengths and limitations of your own argument, but that you also understand and have thought about the alternatives to it. To do that, you have to bring those alternative views into your argument by acknowledging and responding to them.

If you know your subject and readers very well, you can try to imagine those alternatives yourself. But usually the best way to identify alternative views is to look to your sources. In chapter 6, we encouraged you to actively *engage* your sources during your research, to use them not just for data but to stimulate your own thinking. Your sources also offer a ready supply of alternative views that you can respond to in your own argument.

You can think of your secondary sources as a written record of the conversation about your topic, question, or problem. Knowing that conversation allows you to contribute to it. When you read your sources, note where they advance claims different from yours, take different approaches, focus on different aspects of the problem, and so on. Note especially where— and why—you and your sources disagree. Also note where one source disagrees with another. All those disagreements can help you identify alternatives to acknowledge in

your own argument. If you know how you would respond to a particular source, add that response to your notes as you read.

You can respond not only to your sources' claims but also to their evidence. If you find a source's evidence unreliable or irrelevant, don't simply ignore it. If your readers might take it seriously, you can acknowledge it but explain why you didn't use it.

Finally, your sources also help you imagine your readers and anticipate their reactions to your argument. Often your readers will be like your sources' authors; sometimes they may even include them.

10.3 DECIDING WHAT TO ACKNOWLEDGE

If you can imagine just a few of the questions, alternatives, and objections that your readers might have, you'll face a Goldilocks moment: acknowledge too many and you distract readers from the core of your argument; acknowledge too few and you seem indifferent to or even ignorant of their views. You need to figure out how many acknowledgments will feel "just right."

10.3.1 Choosing What to Respond To

To narrow your list of alternatives or objections, consider these priorities:

plausible charges of weaknesses that you can rebut

alternative lines of argument important in your field

alternative conclusions that readers *want* to be true

alternative evidence that readers know

important counterexamples that you have to address

Look for alternatives that let you repeat a part of your argument. For example, if readers might think of exceptions to a definition that in fact are not, acknowledge them and use the response to reinforce your point:

> Some have argued that even food can be addictive, but remember we are concerned here only with substances for which addiction is the norm, not those . . .

Or if readers might think of an alternative solution close to yours, use it to reiterate the virtues of your solution:

> Most researchers argue that rules and other forms of formal writing advice degrade rather than improve performance because writing "is a non-conscious act of making meaning, not a conscious process of following rules." That is true for parts of the process: writers should not consult rules as they draft sentences. But writing involves not just drafting but many conscious processes as well. What we show here is what kinds of formal advice do and do not work for *conscious* aspects of writing. . . .

Finally, acknowledge alternatives that may particularly appeal to your readers, but only if you can respond without seeming to be dismissive. Better to ignore what your readers like than to disparage it.

10.3.2 Acknowledging Flaws in Your Argument

If you discover a flaw in your argument that you cannot fix or explain away, try to redefine your problem or rebuild your argument to avoid it. But if you cannot, you face a tough decision. You could just ignore the flaw and hope your readers don't notice it. But that's dishonest. If they do notice it, they will doubt your competence, and if they think you tried to hide it, they will question your honesty. Our advice may seem naive, but it works: candidly acknowledge the issue and respond that

> the rest of your argument more than balances the flaw.
>
> while the flaw is serious, more research will show a way around it.
>
> while the flaw makes it impossible to accept your claim fully, your argument offers important insight into the question and suggests what a better answer would need.

Occasionally researchers turn failure into success by treating a claim they wanted to support but couldn't as a hypothesis that others might find reasonable. Then they show why it isn't:

> It might seem that when jurors hear the facts of a case in a form that focuses on the victim and emphasizes her suffering, they will be more likely to blame the accused. That is, after all, the standard practice of plaintiffs' lawyers. But in fact, we found no correlation between . . .

10.3.3 Acknowledging Questions You Can't Answer

Beginning researchers sometimes think that their goal is to have the last word on a topic, that is, to make an argument that allows for no response but total assent. But that's a mistake. Experienced researchers and teachers understand that no argument is entirely unassailable and that any one version of the truth is often complicated and always contestable. In fact, the most stimulating research is often that which provides not answers to questions we already know, but new sets of questions we haven't yet thought to ask. This is especially true for research addressing conceptual problems, but it can be true for applied research as well.

Knowledgeable readers will think better of your argument and of you if, rather than pretending you have all the answers, you acknowledge your argument's limits, especially those that squeeze you more than you like. Concessions invite readers into the conversation by legitimizing their views, always a gesture that helps sustain a community of researchers. And they will be especially grateful if you can give them new and interesting questions to think about. That's what keeps the conversation going.

10.4 FRAMING YOUR RESPONSES AS SUBORDINATE ARGUMENTS

Acknowledging alternatives and objections gives you an opportunity to respond. But you can't just offer a competing claim. Even a minimal response gives a reason to limit or reject what you have acknowledged:

> Some have argued that food can be addictive,*acknowledgment of objection* but we are concerned here only with substances for which addiction is the norm.*reason why objection is irrelevant*

That initial response may be enough, but only if readers recognize the basis for it, either because it's obvious or because you've made the argument before. Otherwise, explain its basis using additional reasons and evidence:

> Some have argued that food can be addictive,*acknowledgment of objection* but we are concerned here only with substances for which addiction is the norm.*reason why objection is irrelevant* Some who taste chocolate once may be unable to resist it thereafter, but their number is a fraction of those who are immediately addicted to crack cocaine

> after a single exposure.*subreason* Chernowitz (1998) found that just one exposure resulted in . . .*report of* *evidence*

For more substantial responses, you need a full argument, with multiple reasons, evidence, and perhaps even warrants and additional acknowledgments and responses. (At this point, add acknowledgments and responses to the appropriate places in the working plan of your argument. In chapter 12 we'll discuss where to put them in the plan of your first draft.) Again, when responding to alternatives, you face a Goldilocks choice: not too much, not too little. Only experience can teach you how to find this balance. So notice how experts achieve it and do likewise.

10.5 THE VOCABULARY OF ACKNOWLEDGMENT AND RESPONSE

Some writers fail to acknowledge alternatives because they can't think of any. The strategies in this chapter will help you overcome that problem. Others can think of views to acknowledge, but fear that if they do, they weaken their argument. In fact, most readers think that such acknowledgments enhance a writer's credibility. Writers also shy away from acknowledging and responding to objections and alternatives because they don't know how to do those things in writing, on the page or screen. This section shows you how.

When you want to acknowledge and respond to an objection or alternative, you have to decide how much credence to give it: options range from just mentioning an objection and dismissing it to addressing it at length. We present our advice roughly in that order, from most dismissive to most respectful. (Brackets and slashes indicate alternative choices.)

10.5.1 Acknowledging Objections and Alternatives

Acknowledge an objection or alternative in language that shows how much weight you give it. Here are some options.

> You can downplay an objection or alternative by introducing it with *despite*, *regardless of*, or *notwithstanding*:
>
> > [**Despite/Regardless of/Notwithstanding**] Congress's claims that it wants to cut taxes,*acknowledgment* the latest budget proposals suggest that . . .*response*

Use *although*, *while*, and *even though* in the same way:

> [**Although/While/Even though**] Hong Kong is experiencing economic problems,*acknowledgment* Southeast Asia remains a strong . . .*response*

You can signal an acknowledgment indirectly with *seem*, *appear*, *may*, or *could*, or with an adverb like *plausibly*, *justifiably*, *reasonably*, *surprisingly*, or even *certainly*:

> In his letters Lincoln expresses what [**seems/appears**] to be depression.*acknowledgment* But those who observed him . . .*response*

> This proposal [**may have/plausibly has**] some merit,*acknowledgment* but we . . .*response*

You can attribute an objection or alternative to an unnamed source, which gives it a little weight:

> It is easy to [**think/imagine/say/claim/argue**] that taxes should . . .*acknowledgment* But there is
>
> [**another/alternative/possible**] [**explanation/line of argument/ account/possibility**].*response*
>
> Some evidence [**might/may/can/could/does**]
>
> [**suggest/indicate/point to/lead some to think**] that we should . . . ,*acknowledgment* but . . .*response*

You can attribute an objection or alternative to a generic interlocutor, giving it more weight:

> There are [**some/many/a few**] who [**might/may/could/would**] [**say/ think/argue/claim/charge/object**] that Cuba is not . . .*acknowledgment* But, in fact, . . .*response*

> Although [**some researchers/critics/scholars**] have argued that . . . ,*acknowledgment* our research shows . . .

Note that you can weaken your case if you prematurely denigrate those you disagree with:

> Some **naive** researchers have claimed that . . .

The **occasionally careless** historian H has even claimed that . . .

Save criticism for the response, and direct it at the work rather than the person.

You can acknowledge an objection or alternative in your own voice, using *I* or *we*, a passive verb, or a word or phrase such as *admittedly*, *granted*, *to be sure*, and so on, which concedes it some validity:

I [**understand/know/realize**] that liberals believe in . . . *acknowledgment* but . . . *response*

It is [**true/possible/likely**] that electronic cigarettes are less carcinogenic than conventional cigarettes. *acknowledgment* However, . . . *response*

It [**must/should/can**] be

[**admitted/acknowledged/noted/conceded**] that no good evidence

proves that . . . *acknowledgment* Nevertheless, . . .

[**Granted/Certainly/Admittedly/True/To be sure/Of course**], Adams has claimed . . . *acknowledgment* However, . . . *response*

We [**would/could/can/might/may**] [**say/argue/claim/think**] that public health programs such as needle exchanges

encourage . . . , *acknowledgment* but these effects are outweighed by . . . *response*

10.5.2 Responding to Objections and Alternatives

Begin your response with a term or phrase that signals disagreement, such as *but*, *however*, or *on the other hand.* If readers do not already know the basis for that response, support it with at least one reason or even with a complete subordinate argument.

You can respond in ways that range from tactful to blunt.

You can regret not that the source is unclear, but that *you* don't entirely understand:

But [**I do not quite understand how/I find it difficult to see how/It is not clear to me how**] X can claim that, when . . . *response*

2. Or you can note that there are unsettled issues:

> But there are **other issues here** . . ./But there **remains the problem of** . . . *response*

You can respond more forcefully, claiming the acknowledged position is irrelevant or unreliable:

> But as insightful as that may be,*acknowledgment* it [**ignores/is irrelevant to/ does not bear on**] the issue at hand.*response*
> But the [**evidence/reasoning**] is [**unreliable/shaky/thin**].*response*
> But the argument is [**untenable/weak/confused/simplistic**].*response*
> But the argument [**overlooks/ignores/misses**] key factors.*response*

You have to decide how blunt your response should be. If an alternative seems obviously flawed, say so, but focus on the work rather than the person.

When you think another researcher seems to have not thought through an issue carefully, you usually should say so civilly. Here are a few possibilities:

> Smith's evidence is important,*acknowledgment* **but we must look at all the available evidence.***response*
>
> That explains some of the problem,*acknowledgment* **but it is too complex for a single explanation.***response*
> That principle holds in many cases,*acknowledgment* **but not in all.***response*

Quick Tip: Three Predictable Disagreements

There are three kinds of alternatives that at least some readers are likely to think of.

There are causes in addition to the one you claim. If your argument is about cause and effect, remember that no effect has a single cause and no cause has a single effect. If you argue that X causes Y, every reader will think of other causes. European honeybee colonies may be collapsing because of pesticide use, but an informed reader could also list other possible factors, including loss of habitat, disease, genetically modified crops, and parasites. So if you focus on one cause out of many, acknowledge the others. And if you feel readers might think that some cause deserves more attention than you give it, acknowledge that view and explain why you deemphasized it.

What about these counterexamples? No matter how rich your evidence, readers are likely to think of exceptions and counterexamples that they believe undermine your argument. So you must think of them first, acknowledge the more plausible ones, especially if they are vivid, and then explain why you don't consider them as damaging as your reader might. Be particularly wary when you make claims about a phenomenon with a wide range of variation, such as the climate. Readers who do not understand statistical reasoning will focus on an aberrant case, even though it falls within a normal distribution: a cold Fourth of July in Florida does not disprove a claim about global warming, any more than a warm New England Christmas proves it.

I don't define X as you do. To me, X means . . . To accept your claim, readers must accept your definitions, because definitions are crucial warrants (see the next chapter): if you are researching nicotine addiction,

your readers must understand what you mean by that term. Does it mean just a strong craving, a craving that some people can't resist, or a craving that *no one* can? You can find definitions ranging from a few lines in a dictionary to pages in a medical reference work. But regardless of what those sources say, readers tend to redefine terms they encounter to suit their own views. Cigarette manufacturers long argued that cigarettes are not addictive because some people can quit; their critics argued that cigarettes are addictive because more people can't.

When your argument hinges on the meaning of a term, define it to support your solution and offer a subordinate argument for your definition. Don't treat a dictionary definition as authoritative (never begin, "According to *Webster's*, 'addiction' means . . ."). Be aware of plausible alternative definitions that you may need to acknowledge. If you use a technical term that also has a common meaning (like *social class* or *theory*), acknowledge that common meaning and explain why you have adopted the technical one. Conversely, if you do not use a technical term as expert readers expect you to, acknowledge that and explain why you've opted for another meaning.

11 Warrants

Warrants are general principles that connect reasons to claims. This chapter explains when and how to use them. In general, you should state your warrants only when your readers will not understand your argument without them or when you expect your readers to challenge your reasoning. When you write for experts in

a field, you can leave most of your warrants unstated, because your readers will usually know them already and take them for granted.

Consider this argument:

> The Russian Federation faces a falling standard of living,*claim* because its birthrate is only 13.2 per 1,000 and life expectancy for men is only about 63 years.*reason*

Someone responds:

> Well, you're right about Russia's birthrate and life expectancy, but I don't see how that's relevant to your claim that its standard of living will fall. What's the connection?

How would the person making the argument answer? More important, if that argument were in writing, how would she know that she had to answer that question *before it was asked?* Such questions address the fifth and most complex element of an argument: its warrants. A warrant is a principle that connects a reason to a claim. Warrants are important because readers may challenge not just the validity of a reason but its *relevance* as well.

In this chapter, we explain how warrants work, how to test them, and when and when not to state them. The basic principle is this: state your warrants only if your readers will not be able to understand your reasoning without them, or if you anticipate that your reasoning will be challenged.

But as we get started, a word of caution: everyone struggles to understand warrants—including, from time to time, all of us. So if at the end of this chapter you still have questions, you're not alone.

11.1 WARRANTS IN EVERYDAY REASONING

Warrants are hard to grasp, but we understand them easily enough when people offer proverbs to justify their reasoning. That's because proverbs are warrants that we all know. For example, someone says:

> I hear the FBI has been questioning the mayor's staff.*reason* He must be involved in something crooked.*claim*

Another person might object, *You're right. The FBI has been questioning his staff, but why does that mean he's crooked?* To explain the reasoning that led to that conclusion, the first person might offer the proverb, *Well, where there's smoke, there's fire.* That is, when we see a sign of something wrong, we can infer that something is in fact wrong.

The logic behind that reasoning is this. Most proverbs describe a situation made up of two distinct parts: a circumstance (*Where there's smoke, . . .*) and its consequence (*. . . there's fire*). If the connection between the circumstance and consequence is true or reasonable in general, it must also be true or reasonable in specific instances. In the case of smoke, fire, the FBI, and the mayor, that logic looks like this:

We use proverbs to justify many kinds of everyday reasoning: cause and effect (*Haste makes waste*); rules of behavior (*Look before you leap*); reliable inference (*One swallow does not a summer make*). But such proverbs are not our only examples of everyday warrants. We use warrants everywhere: in sports (*Defense wins championships*); in cooking (*Serve oysters only in months with an "r"*); in definitions (*A prime number can be divided only by itself and one*); even in research (*When readers find an error in one bit of evidence, they distrust the rest*).

11.2 WARRANTS IN ACADEMIC ARGUMENTS

In academic arguments, warrants work in exactly the same way. But in contrast to proverbs and other everyday warrants, academic warrants can be difficult to manage—especially for researchers new to a field—for three reasons.

First, academic warrants aren't commonplaces we all share. They are specific principles of reasoning that belong to particular communities of researchers, and they are countless. A fact of life is that it just takes time for new researchers to grasp the warrants of their fields.

Second, experienced researchers rarely state their warrants explicitly when they write for specialized readers in their fields because they can safely assume that these readers already know them. (To state the obvious would seem not helpful but condescending.) This practice serves specialized readers well. But it poses a challenge to novices, who have to figure out what makes some reasons relevant to claims and others not, something those experts take for granted. That's why beginners in any field struggle with the *logic* of arguments written for specialists.

Here's an example of an academic warrant at work. Assuming the available evidence supported the reason, biologists would accept this argument:

> A whale is more closely related to a hippopotamus than to a cow,*claim* because it shares more DNA with a hippopotamus.*reason*

No biologist would ask, *What makes DNA relevant to measuring relationship?* So no biologist writing for her colleagues would offer a warrant answering that question. If, however, a non-biologist asked that question, the biologist would answer with a warrant other biologists take for granted:

> When a species shares more DNA with one species than it does with another,*circumstance* we infer that it is more closely related to the first.*consequence*

Of course, the biologist would probably then have to explain that warrant as well. The point is this: whether or not a warrant gets stated explicitly depends not only on the argument but also on the audience. Experts state principles that are obvious to other experts only when they communicate with non-experts—or when challenged.

Third, academic warrants are often stated in ways that compress their circumstances and consequences. In most proverbs, these parts are distinct: *Where there's smoke,circumstance there's fire.consequence* But we can also compress those two parts into one short statement: *Smoke means fire*. That's something we rarely do with proverbs but that experts often do with their specialized warrants:

> Shared DNA is the measure of the relationship between species.

Phrased this way, our biologist's warrant doesn't explicitly distinguish a circumstance from its predictable consequence. But however compressed a warrant might be, we can always infer those two parts. For purposes of clarity, we'll state warrants in their most explicit two-part form: *When X, then Y*.

11.3 UNDERSTANDING THE LOGIC OF WARRANTS

Here again is that argument about Russia's economic future:

> The Russian Federation faces a falling standard of living,*claim* because its birthrate is only 13.2 per 1,000 and life expectancy for men is only about 63 years.*reason*

If someone objects that the reason seems *irrelevant* to the claim, the person making the argument would have to justify the connection with a warrant consisting of two parts: (1) a general circumstance that lets us draw a conclusion about (2) a general consequence.

> When a nation's labor force shrinks,*general circumstance* its economic future is
>
> grim.*general consequence*

Both the circumstance and consequence have to be more general than the specific reason and claim. Visually, that logic looks like this:

That's the same pattern we saw in the argument about smoke, fire, and the crooked mayor.

11.4 TESTING WARRANTS

Readers challenge warrants in predictable ways. Consider this argument:

> Contrary to popular belief, gun ownership in America was probably not widespread in the first half of the nineteenth century and before,*claim* because guns were rarely mentioned in wills.*reason* A review of 4,465 wills filed in seven states from 1750 to 1850 shows that only 11 percent mention a long gun or handgun.*report of evidence*

Such a claim is likely to be resisted by those who believe that those who founded the United States owned guns. So even if they accept that the reason is true—that guns were in fact rarely mentioned in wills—they may still object: *But I don't see how that counts as a reason to believe that few people owned a gun. It's irrelevant.*

If a writer anticipated that readers would raise that objection, she would offer a warrant to link the specific reason to the specific claim before she stated them:

> In the eighteenth and early nineteenth centuries, valuable objects were listed in wills, **so when someone failed to mention a valuable object in his will, he did not own one.***warrant* Since guns were valuable but were rarely mentioned in wills before 1850,*reason* gun ownership must not have been widespread.*claim*

But if she wants her readers to accept that warrant, she must ask herself five questions before her readers do:

> Is that warrant reasonable?
>
> Is it sufficiently limited?
>
> Is it superior to any competing warrants?
>
> Is it appropriate to this field?
>
> Is it able to cover the reason and claim?

11.4.1 Is Your Warrant Reasonable?

A warrant seems reasonable when readers can accept that its consequence follows from its circumstance. If readers don't accept that, you must first convince them to accept your warrant by treating it as a claim in its own argument, supported by its own reasons and evidence:

> In the eighteenth and early nineteenth centuries, valuable objects were listed in wills, so when a will failed to mention such a valuable object, the person did not own one.*warrant/claim* Watson (1989) confirmed that to be the case.*reason* In a study of 1,356 wills filed in Cumberland County between 1750 and 1825, he found . . .*evidence*

11.4.2 Is Your Warrant Sufficiently Limited?

Most warrants are reasonable only within certain limits. For example, that warrant about gun ownership seems to allow no exceptions:

> In the eighteenth and early nineteenth centuries, valuable objects were listed in wills.

That version is too broad; it might seem more plausible if it were qualified:

> In the eighteenth and early nineteenth centuries, **most** household objects **considered valuable by their owners** were **usually** listed in wills.

But once you start qualifying a warrant with words like *most* and *usually*, you then have to show that its exceptions do not exclude your reason and claim: *What frequency are* most *and* usually? *Were guns always considered valuable*?

11.4.3 Is Your Warrant Superior to Any Competing Warrants?

You may think your warrant is reasonable and sufficiently limited, but others might contradict it. Here are two more competing warrants, both arguably reasonable:

> **When parents believe a medical procedure may harm their children, they have a right to refuse it.** Taylor and Chris believe the measles vaccine causes autism, so they can refuse to have it administered to their daughter.
>
> **When medical decisions concern matters of public health, the state has a right to regulate them.** When most children in a population are vaccinated against measles, everyone is safer, so the state can compel Taylor
>
> and Chris to allow their daughter to be vaccinated.

Which warrant should prevail? That's a matter for yet another argument. You can sometimes reconcile competing warrants by limiting them:

> **When parents believe a medical procedure may harm their children, they have a right to refuse it, so long as that does not jeopardize the health of others.**
>
> **When medical decisions concern matters of public health, the state has a right to regulate them, so long as the state encroaches as little as possible on parents' prerogative to make medical decisions for their children**.

Finding the right balance is not easy. Again, it's a matter for argument.

11.4.4 Is Your Warrant Appropriate to This Field?

Your warrant may be reasonable, sufficiently limited, and superior to others, but your readers might still reject it if it is not appropriate to their particular research community. Law students get a painful lesson in the law when they find that many warrants they take for granted have no place in legal arguments. For example, like most of us, they start law school holding this commonsense belief:

> When a person is wronged, the law should correct it.

But law students have to learn that legal warrants may trump such commonsense ideas. For example:

> When one ignores legal obligations, even inadvertently, one must suffer the consequences.

Therefore:

> When elderly home owners forget to pay real estate taxes, others can buy their houses for back taxes and evict them.

Against their most decent instincts, law students must learn to argue that justice is not the outcome they believe to be ethical but the one that the law and the courts support.

11.4.5 Is Your Warrant Able to Cover Your Reason and Claim?

Finally, you must be sure that your reason and claim are good instances of your warrant's general circumstance and general consequence. For example:

> **Ahmed:** You should buy a gun,*claim* because you live alone.*reason*
>
> **Beth:** Why does living alone mean I should buy a gun?
> **Ahmed:** When you aren't safe,*general circumstance* you should protect yourself.*general consequence*
>
> **Beth:** But living alone doesn't make me unsafe.

Beth objects not that Ahmed's reason is false but that it is not a valid *instance* of his warrant's general *circumstance.* So to her, Ahmed's reason isn't covered by his warrant and is therefore not *relevant*. Beth might also have responded that owning a gun would make her home less safe (rather than more). In that case, she would be objecting that Ahmed's claim isn't a good instance of the warrant's *consequence*, that is, that it doesn't *follow* from his reason: even if she was unsafe, a gun would not allow her to protect herself.

If all this seems complicated, know that you are in good company: the relationship of warrants to claims and reasons has vexed logicians since at least the time of Aristotle. But just knowing the ways that readers typically challenge warrants will help you write better arguments, which is why we've listed those five questions above.

11.5 KNOWING WHEN TO STATE A WARRANT

An argument in any field depends on countless principles of reasoning, but most of these principles are so deeply embedded in our tacit knowledge that we rarely state them. There are three occasions, however, when you may have to:

Your readers are outside your field. When you write as an expert for non-expert readers, you may need to explain how experts draw conclusions and support their claims, especially if these ways of reasoning are unusual.

You use a principle of reasoning that is new or controversial in your field. When you rely on unconventional principles of reasoning, you can anticipate that at least some of your readers will be skeptical. So defuse that skepticism by stating your warrant and then justifying it. Refer to others in your field who also use it. If you can't do that, make an argument of your own defending your reasoning.

You make a claim that readers will resist because they just don't want it to be true. In this case, a good strategy is to start with a warrant that you hope readers will accept *before* you lay out a reason and claim that you fear they will resist. They may not like the claim any better, but you will at least encourage them to see that it is not unreasonable. For example:

> We should accept that human actions are largely responsible for climate change,*claim* because virtually all climate scientists hold that view.*reason*

What You Don't Say Says Who You Are

You treat readers courteously when you state and support warrants to explain principles of reasoning that they may not recognize. But you make an equally strong (though less friendly) gesture when you keep silent about warrants you should state for readers not in the know. One way or the other, warrants significantly affect how readers perceive the ethos you project through your arguments.

Some readers may resist that claim because it threatens other strong convictions they hold. A writer confronting such readers might encouragethem at least to consider that claim by giving them a warrant that they should be able to accept:

> **When an overwhelming majority of competent experts arrive at the same conclusion, we can probably trust it.***warrant* We should therefore accept that human actions are largely responsible for climate change,*claim* because virtually all climate scientists hold that view.*reason*

When readers accept that a warrant is reasonable, that a reason is true, and that the reason and claim are good instances of the warrant's general circumstance and consequence, then they are logically obliged at least to consider the claim. If they don't, no rational argument is likely to change their minds.

11.6 USING WARRANTS TO TEST YOUR ARGUMENT

All arguments rely on warrants, even if they aren't stated explicitly. You can test the soundness of an argument by trying to imagine a warrant for it. Here is a flawed argument about how violent video games affect children:

> Children aged 12–16 today are significantly more violent than their counterparts from a generation ago.*reason* Brown (2013) has shown
>
> that . . .*evidence* Given these facts, it seems highly likely that violent video games are exerting a destructive influence on today's youth.*claim*

To understand what's wrong here, we can imagine a warrant that would allow us to draw a conclusion about the effect of video games on children:

> **When children are constantly exposed to images of sadistic violence, they are influenced for the worse.***warrant* Children aged 12–16 today are

> significantly more violent than their counterparts from a generation ago.*reason* Brown (2013) has shown that . . .*evidence* Given these facts, it seems highly likely that violent video games are exerting a destructive influence on today's youth.*claim*

Now we can see the problem: the specific circumstance—rising violence among children aged 12–16—is not a valid instance of the warrant's general circumstance: children being exposed to images of sadistic violence.

So even if that statement about rising violence among children is true, it can't justify the claim. To fix that argument, we have to revise the reason to be a good instance of the warrant's general circumstance, which may also mean producing new evidence to support that new reason:

> **When children are constantly exposed to images of sadistic violence, they are influenced for the worse.***warrant* Over the past decade, video games have become a major source of children's exposure to violent imagery.*new reason* Jones (2014) shows that . . .*new evidence* Given these facts, it seems highly likely that violent video games are exerting a destructive influence on today's youth, making them significantly more violent than their counterparts from a generation ago.*claim*

Now the reason and claim seem closer to what the warrant covers or include

But a reader keen to derail the argument might still object:

> Wait. All those images aren't "sadistic." Much of it is cartoon violence. And children aren't *constantly* exposed to it.

In response, the writer would have to deal with those issues.

Now you understand why important issues are so endlessly contested, why, even when you feel your case is airtight, your readers can still say, *Wait a minute. What about . . . ?* Readers can challenge reasons in two ways. They can object that your reasons are not grounded on sound evidence or that they seem irrelevant to a claim. To answer the first sort of objection, you must find better evidence. To answer the second sort, you must provide a warrant that makes your reasons relevant. If you can't, you must revise your argument.

11.7 CHALLENGING OTHERS' WARRANTS

The most difficult arguments to make are those that challenge not just the claims and evidence that a research community accepts but also the warrants it embraces. No argumentative task is harder, because when you challenge a community's warrants, you ask readers to change not just *what* they believe but *how* they reason. To challenge a warrant successfully, you must first imagine how those who accept it would defend it. Warrants can be based on different *kinds* of supporting arguments, so you have to challenge them in different ways.

11.7.1 Challenging Warrants Based on Experience

We base some warrants on our experience or on reports by others.

> When people habitually lie, we don't trust them.
>
> When insecticides leach into the ecosystem, eggshells of wild birds become so weak that fewer chicks hatch and the bird population falls.

To challenge those warrants, you have two choices, both difficult: (1) challenge the reliability of the experience, which is rarely easy; (2) find counterexamples that cannot be dismissed as special cases.

11.7.2 Challenging Warrants Based on Authority

We believe some people because of their expertise, position, or charisma.

> When authority X says Y, Y must be so.

The easiest—and friendliest—way to challenge an authority is to argue that, on the matter in question, the authority does not have all the evidence or reaches beyond its expertise. The most aggressive way is to argue that the source is in fact not an authority at all.

11.7.3 Challenging Warrants Based on Systems of Knowledge

These warrants are backed by systems of definitions, principles, or theories:

> **FROM MATHEMATICS:** When we add two odd numbers, we get an even one.

FROM BIOLOGY: When an organism reproduces sexually, its individual offspring differ.

FROM LAW: When we drive without a license, we commit a misdemeanor.

When you challenge these warrants, “facts” are largely irrelevant. You must either challenge the system, always difficult, or show that the case does not fall under the warrant.

11.7.4 Challenging General Cultural Warrants

These warrants are backed not by individual experience but by the common experience of an entire culture. To members of that culture, they seem unassailable “common sense.”

Out of sight, out of mind.

An insult justifies retaliation.

Handling toads causes warts.

Warrants like these may change over time, but slowly. You can challenge them, but readers will resist, because you seem to be challenging their heritage.

11.7.5 Challenging Methodological Warrants

Think of these as “meta-warrants,” general patterns of thought with no content until applied to specific cases. We use them to explain abstract reasoning (they are the source of many proverbs):

GENERALIZATION: When every known case of X has quality Y, then all Xs probably have quality Y. (*Seen one, seen them all*.)

ANALOGY: When X is like Y in most respects, then X will be like Y in other respects. (*Like father, like son.*)

SIGN: When Y regularly occurs before, during, or after X, Y is a sign of X. (*Cold hands, warm heart*.)

Philosophers have questioned these warrants, but in matters of practical argumentation, we challenge only their application or point out limiting conditions: *Yes, we can analogize X to Y, but not if . . .*

11.7.6 Challenging Warrants Based on Articles of Faith

Some warrants are beyond challenge: Jefferson invoked one when he wrote, *We hold these truths to be self-evident, that all men are created equal. . . .*

Others include

> When a claim is experienced as revealed truth, it must be true.
>
> When a claim is based on divine teaching, it must be true.

Such warrants are backed not by evidence but by the certainty of those who espouse them. It is pointless to challenge them, because they are statements of faith, impervious to argument or evidence. If you encounter them as you gather your data, ignore them or treat them not as a subject for research but as an inquiry into the meaning of life.

Quick Tip: Reasons, Evidence, and Warrants

You can justify your reasons in two ways: by offering evidence to support them or by deriving them from a warrant. Each of these ways leads to a different kind of argument. Researchers generally trust the first kind more than the second, so base your reasons on solid evidence when you can. Compare these two arguments:

> We should do what we can to discourage teenagers from texting and driving,*claim* because distracted driving is a leading cause of teenage deaths.*reason* According to the CDC, motor vehicle accidents are responsible
>
> for over a third of all fatalities among people aged 12–19, and texting while
>
> driving exponentially increases the likelihood that any driver will be involved in one. Moreover, . . .*evidence*
>
> We should do what we can to discourage teenagers from texting and driving,*claim* because when they do, their risk of having an accident increases.*reason 1* Driving is difficult and texting a distraction,*reason 2*

supporting reason 1 and we know that when people are distracted while performing complex tasks, their performance suffers.*warrant linking reason 2 and reason 1*

If you are like most contemporary readers, you probably preferred the first of these arguments. That's because its warrant is not controversial (and therefore goes without saying) and its claim is supported by a reason based on solid evidence. That second argument is plausible because reason 1 and reason 2 are good instances of that warrant's general consequence and condition. But most readers still want evidence.

In particular, you can't support a claim of fact (see 8.1) with a warrant and reason alone:

> Texting and driving is a leading cause of teenage deaths,*claim of fact* because texting while driving is very distracting.*reason* When drivers are distracted, they increase their risk of having serious even fatal accidents.*warrant*

Are you thinking, *I could believe that, but I'd like some proof?* That commonsense response is telling. We can't just *reason* our way to the conclusion that texting while driving is a *leading* cause of teen fatalities, or even that it causes teen fatalities *at all*. Except in a few fields—some branches of mathematics, philosophy, theology—the way to demonstrate a claim of fact is to show with evidence that what you are claiming is, *in fact*, the case.

The lesson is this: whenever you can, rely not on elaborate lines of reasoning based on warrants but on hard evidence.

PART IV

Writing Your Argument

Prologue

Planning Again

No formula can tell you when to start drafting. Many writers begin without a full plan, and as things become clearer, they have to discard good but irrelevant pages. Others can't get going without multiple outlines and summaries. And some of us compose drafts in our heads well before turning to a serious draft in writing. You have to find your own way to start a first draft, but you can prepare for that moment if you keep writing your way toward the paper from the start through summaries, analyses, and critiques.

Here's how you know when you're ready to plan a draft:

You know who your readers are, what they know, and why they should care about your problem.

You know the kind of ethos or character you want to project.

You can sketch your question and its answer in two or three sentences.

You can sketch the reasons and evidence supporting your claim.

You know the questions, alternatives, and objections that your readers are likely to raise, and you can respond to them.

You know when your readers may not see the relevance of a reason to a claim and can state the warrant that connects them.

Even when they have a plan and are ready to draft, though, experienced writers know that they won't march straight through to a finished product. They know they'll go down blind alleys, but also make new discoveries, maybe even rethink their whole project. They also know that a lot of their early drafting will not make it into their final draft, and so they start early enough to leave time for revision.

Sorting Out Terms: Hypothesis, Answer, Solution, Claim, Point

In part II we used the terms *answer*, *hypothesis*, and *solution* to name the sentence that resolved the central issue of your research. In part III we used the term *main claim* to refer to the answer, hypothesis, or solution that constitutes the key assertion that the rest of your argument supports. Here in part IV we use *point* to name the sentence that states the main claim in a paper (some use the term *thesis*). *Hypothesis*, *answer*, *solution*, *claim,* and

point—all those terms refer to the same sentence. We use different terms because each defines the role of that sentence from a different angle.

Part IV will lead you through the process of creating your final paper. In chapter 12 we walk through planning and drafting, then in chapter 13 organizing your argument. In chapter 14 we discuss the demanding task of incorporating and citing sources. In chapter 15 we discuss how to present quantitative data in visual form, and in chapter 16 how to write effective introductions and conclusions. Finally, in chapter 17 we deal with problems of writing in a clear and direct style.

12 Planning and Drafting

Once you've assembled your argument, you might be ready to draft it. But experienced writers know that time spent planning a first draft more than pays off when they start writing it. A plan helps you organize the elements of your argument into a form that will be both coherent and persuasive to your readers.

Some fields stipulate the plan of a research report. In the experimental sciences, for example, readers expect reports to follow a plan something like this:

Introduction – Methods and Materials – Results – Discussion – Conclusion

If your field requires you to follow a conventional plan, ask your teacher for a model or find one in a secondary source. In most fields, however, you have to create a plan of your own, but that plan must still help readers find what they are looking for.

12.1 PLANNING YOUR PAPER

12.1.1 Sketch a Working Introduction

Writers are often advised to write their introductions last. A few writers can wait until they've written their last words before they write their first ones, but most of us need a working introduction to start us on the right track.

Expect to write your introduction twice, a sketchy one for yourself right now, then later a final one for your readers. That final introduction will usually have three parts (see chapter 16), so you might as well sketch your working introduction to anticipate them.

At the top of the first page of your storyboard, sketch a *brief* summary of *only* the key points in *only* those sources most relevant to your argument. An account of marginally relevant references has no place in your introduction. Summarize only the sources that you intend to challenge, modify, or expand on. Then order those sources in a way that is useful to your readers: chronologically, by quality, significance, point of view, and so on. Under *no* circumstances follow the order in which you happened to read them or record them in your notes. If you're sure what will go into this summary, just list the sources in a useful order.

After your summary of sources, rephrase your question as a statement about a flaw or gap that you see in them:

> Why is the Alamo story so important in our national mythology?
>
> Few of these historians, however, have explained why the Alamo story has become so important in our national mythology.

Sketch an answer to *So what if we don't find out?* You may be only guessing but try to find *some* answer.

> If we understood how such stories become national legends, we would better understand our national values, perhaps even what makes us distinct.

If you can't think of any answer to *So what?*, skip it; we'll return to it in chapter 13.

State the answer to your question as your point, or promise an answer in a launching point. You have two choices here:

State the point of your paper at the end of your introduction to frame what follows and again near the beginning of your conclusion.
State it only in your conclusion, as a climax to your reasoning.

This is a crucial choice, because it creates your social contract with your readers. If you state your main point toward the end of your introduction, you put your readers in charge: *Reader, you control how to read this paper. You know my problem and its solution, my point. You can decide how—even whether—to read on. No surprises.* On the other hand, if you wait until your conclusion to state your main claim, you create a more controlling relationship: *Reader, you must follow me though every twist and turn until we reach the end, where I will finally reveal my point.* Most readers prefer to see your main point at the end of your introduction, because that lets them read what follows faster, understand its relevance better, and remember it all longer. Stating your claim early also helps keep *you* on track.

Some new researchers fear that if they reveal their main point too early, readers will be "bored" and stop reading. Others worry about repeating themselves. Both fears are baseless. If you ask an interesting question, readers will want to see how well you can answer it.

If you decide to announce your claim only in your conclusion, you still need a sentence at the end of your introduction that launches your reader into the body of your paper. That sentence should include terms that name the key concepts that will run through your paper (see 6.6.1, 8.2.1, 12.1.2). You'll be better prepared to write that launching sentence after you draft your final introduction. So for purposes of planning, put your main claim at the bottom of your storyboard's introduction page; you can move it later.

Some writers add a "road map" at the end their introduction:

In part 1, I discuss the issue of . . . Part 2 addresses . . . Part 3 examines . . .

Road maps are common in the social sciences, but many in the humanities find them clumsy. You can add a road map to your storyboard to guide your drafting, then cut it from your final draft. If you keep it, make it short,

Here is how the first page of your storyboard might now look:

> Research has shown that female athletes under eighteen have almost twice the risk of sustaining concussions as male athletes of the same age who play
>
> the same sports.*context* [Summary of key sources follows.]
>
> But that research reveals little about the causes of this discrepancy.*question*
>
> *rephrased as gap in research*
>
> Until we understand why female athletes suffer proportionally more concussions than their male counterparts, we can't know the most effective ways to protect them.*consequences of question*
>
> The discrepancy appears to be due in part to differences in the protective equipment worn by male and female athletes as well as to different standards of monitoring, reporting, and care when injuries occur.*your tentative*
>
> *main point*

Sketchy as it is, this introduction is enough to start you on track. In your final draft, you'll revise it to state your problem more completely (see chapter 16).

12.1.2 Identify Key Concepts That Will Run Through Your Whole Paper

For your paper to seem coherent, readers must see a few key concepts running through all of its parts. You might find them among the terms you used to categorize your notes, but they must include keywords from the sentences stating your problem and main point. On the introduction page, circle four or five words that express those concepts. Ignore words that name your general topic; focus on those relevant to your specific question:

> employment, job satisfaction, recent SE Asian immigrants, cross-cultural, length of residence, prior economic level

If you find few key terms, your topic and point may be too general (review 8.2.1). List those key terms at the top of each storyboard page, and keep them in mind as you draft.

12.1.3 Plan the Body of Your Paper

Sketch background and define terms. After the introduction page of your storyboard, add a page on which you outline necessary background. You may have to define terms, spell out your problem or review research in more detail, set limits on your project, locate your problem in a larger historical or social context, and so on. Keep it short.

Create a page for each major section of your paper. At the top of each of these pages, write the point that the rest of that section supports, develops, or explains. Usually, this will be a reason supporting your main claim.

Find a suitable order. When you assembled your argument (see 9.1), you ordered its parts in a way that may have been clear to you. But when you plan a draft, you must order them in a way that meets the needs of your readers. When you're not sure what that order should be, consider these options. The first two are based on your topic:

Part-by-part. If you can break your topic into its parts, you can deal with each in turn, but you must still order those parts in a way that helps readers understand them—by their functional relationships, hierarchy, and so on.

Chronological. This is the simplest: earlier to later or cause to effect.

These next six are based on your readers' knowledge and understanding.

Short to long, simple to complex. Most readers prefer to deal with simple issues before they work through more complex ones.

More familiar to less familiar. Most readers prefer to read about more familiar issues before they read about new ones.

Less contestable to more contestable. Most readers move more easily from what they agree with to what they don't.

More important to less important (or vice versa). Readers prefer to read more important reasons first (but those reasons may have more impact if they come last).

Earlier understanding to prepare for later understanding. Readers may have to understand some events, principles, definitions, and so on before they understand something else.

General analysis followed by specific applications. Readers may have to understand the outlines of your overall position before they can follow how you apply it to specific texts, events, situations, and so on.

Often these principles cooperate: what readers agree with and easily understand might also be short and familiar. But these principles may also conflict: readers might reject most quickly reasons that are most important. Whatever your order, it must reflect *your readers'* needs, not the order that the material seems to impose on itself (as in an obvious compare-contrast organization), least of all the order in which those reasons occurred to you.

Finally, make the principle of order you choose clear by sketching at the

top of each page words that show it: *First* . . . , *second* . . . ; *Later* . . . ,

finally . . . ; *More important* . . . ; *A more complex issue is* . . . ; *As a result* . . . Don't worry if these terms feel awkward. At this point, they're for your benefit, not your readers'. You can revise or even delete them from your final draft.

12.1.4 Plan Each Section and Subsection

Highlight the key terms in each section and subsection. Just as your paper needs an introduction, so does each of its sections. Earlier we told you to state the point of each section at the top of its storyboard page. Now, just as you picked out key terms to run through your whole paper, circle the ones that uniquely distinguish this section from all the others; they should be in the sentence that states the point of that section. If you cannot find terms to distinguish a section, look closely at how it contributes to the whole. It may offer little or nothing.

Indicate where to put evidence, acknowledgments, warrants, and summaries. Add these parts to the storyboard page for each section. They may, in turn, need to be supported by their own arguments.

Evidence. Most sections consist of evidence supporting a reason. If you have different kinds of evidence supporting the same reason, group and order them in a way that makes sense to readers. Note where you may have to explain your evidence—where it came from, why it's reliable, exactly how it supports a reason.

Acknowledgments and responses. Imagine what readers might object to, then outline a response. Responses may be sub-arguments with a claim, reasons, evidence, and even another response to an imagined response to your response.

Warrants. Generally speaking, if you need a warrant, state it before you offer its claim and supporting reason. This following argument, for example, needs a warrant if it's intended for non-experts in Elizabethan social history:

Since most students at Oxford University in 1580 signed documents with only their first and last names,*reason* most of them must have been commoners.*claim*

That argument is clearer to everyone (even experts) when introduced by a warrant:

In late sixteenth-century England, when someone was not a gentleman but a commoner, he did not add "Mr." or "Esq." to his signature.*warrant* Most students at Oxford University in 1580 signed documents with only their first and last names,*reason* so most of them must have been commoners.*claim*

If you think readers might question your warrant, make an argument supporting it.

If your paper is long and "fact-heavy" with dates, names, events, or numbers, you might end each major section by briefly summarizing the progress of your argument. What have you established in that section? How does your argument shape up so far? If in your final draft those summaries seem clumsy, cut them.

12.1.5 Sketch a Working Conclusion

State your point again at the top of a conclusion page of your storyboard.

After it, if you can, sketch its significance (another answer to *So what?*).

In doing all this, you may discover that you can't use all the notes you collected. That doesn't mean you wasted time. Research is like gold mining: dig up a lot, pick out a little, toss the rest. Ernest Hemingway said that you know you're writing well when you discard stuff you know is good—but not as good as what you keep.

12.2 AVOIDING THREE COMMON BUT FLAWED PLANS

Not all plans are equally good. Our first efforts often track our thinking or activities as researchers but not the experiences of readers.

Do not organize your paper as a narrative of your thinking. Few readers want to know what you found first, followed by the dead ends you hit, then the problems you overcame. They become especially annoyed when they have to slog through the history of your project to get to a main point you've saved for the end.

To test your draft for this problem, look for sentences that refer not to the results of your research but to how you did it or to what you were thinking. You see signs of this in language like *The first issue was . . .* ; *Then I compared . . .* ; *Finally, I conclude.* If you discover more than a few such sentences, you may not be supporting a claim but rather telling the story of how you found it. If so, reorganize your paper around the core elements of your argument—your claim and the reasons supporting it.

Do not assemble your paper as a patchwork of your sources. Readers want *your* analysis, not a summary of your sources. Beginning researchers go wrong when they string together quotations, summaries, and loose paraphrases of sources into a patchwork that reflects little of their own thinking. Such "patch writing" invites the charge *This is all summary, no analysis.* It is a particular risk if you do most of your research online, because it is so easy to cut-and-paste from your sources. Experienced readers recognize patch writing, and you risk a charge of plagiarism (see 14.6).

Advanced researchers rarely offer patchwork summaries, but they can follow sources too closely in another way: they map their paper on to the organization of a major source rather than create a new one that serves their argument better. If the key terms that run through your paper are the same as those in one or more sources, consider whether you are making your own argument or mimicking theirs.

Do not map your paper directly on to the language of your assignment. If you echo the language of your assignment in your first paragraph, your teacher may think that you've contributed no ideas of your own, as in this example:

> **ASSIGNMENT:** Different theories of perception give different weight to cognitive mediation in processing sensory input. Some claim that input

reaches the brain unmediated; others that receptive organs are subject to cognitive influence. Compare two

theories of visual, aural, or tactile perception that take different positions on this matter.

PAPER'S OPENING PARAGRAPH: Different theorists of visual perception give different weight to the role of cognitive mediation in processing sensory input. In this paper I will compare two theories of visual perception, one of which . . .

If your assignment lists a series of issues to cover, avoid addressing them in the order given. If, for example, you were asked to "compare and contrast Freud and Jung on the imagination and unconscious," you would not have to organize your paper into two parts, the first on Freud and the second on Jung. That kind of organization too often results in a pair of unrelated summaries. Instead, try breaking the topics into their conceptual parts, such as elements of the unconscious and the imagination, their definitions, and so on; then order those parts in a way useful to your readers.

12.3 TURNING YOUR PLAN INTO A DRAFT

Some writers think that once they have an outline or a storyboard, they can just grind out sentences. Experienced writers know better. They know that drafting can be an act of discovery that planning can never replace, because it is then that we often experience one of research's most exciting moments: we discover ideas that we didn't have until we expressed them. But like other steps in the process, even surprises happen better with a plan.

12.3.1 Draft in a Way That Feels Comfortable

Many experienced writers begin to write long before they fill up their storyboard. They create a rough plan, use early drafts to explore what they think, then create a final plan based on what they discover. They know that much of that early writing will not survive, so they start early. Exploratory drafting can help you discover ideas you never imagined, but it works only if you have a distant deadline. If you are new to your topic or have a short deadline, draft when you have a clearer plan.

Start Drafting as Soon as You Can

Deadlines come too soon: we long for another month, a week, just one more day. (We fought deadlines for every edition of this book.) In fact, some researchers seem never able to finish, thinking they have to keep working until their paper, dissertation, or book is perfect. That perfect paper has never been written and never will be. All you can do is to make yours as good as you can in the time available. When you've done that, you can say to yourself: *Reader, after my best efforts, here's what I believe —not the whole or final truth, but a truth important to me and I hope to you. I have tested and supported that truth as fully as time and my abilities allow, so that you might find my argument strong enough to consider, perhaps to accept, maybe even to change what you believe.*

Once they have a plan, many writers draft quickly: they let the words flow, omitting quotations and data that they can plug in later, skipping ahead when they get stuck. If they don't remember a detail, they insert a "[?]" and keep writing until they run out of gas, then go back to look it up. But quick drafters need time to revise, so if you draft quickly, start early.

Other writers can work only slowly and carefully: they have to get every sentence right before they start the next one. To do that, they need a meticulous plan. So if you draft slowly, create a detailed outline or storyboard.

Most writers work best when they draft quickly, revise carefully, and toss what's irrelevant. But draft in any way that works for you.

12.3.2 Use Keywords to Keep Yourself on Track

One problem with drafting is staying on track. A storyboard helps, but you might also keep your key concepts in front of you and, from time to time, check how often you use them, especially those that distinguish each section. But don't let your storyboard or key terms stifle fresh thinking. If you find yourself wandering, follow the trail until you see where it takes you. You may be on the track of an interesting idea.

Even if papers in your field don't use headings and subheadings, we suggest that you do when you draft. Create each heading out of the words that are unique to the section or subsection it heads:

Sam Houston as a Hero in Newspapers Outside of Texas

These headings also show the structure of your paper at a glance (numbered headings are common in some social sciences, rare in the humanities). If your field doesn't use heads, delete them from your final draft.

Quick Tip: Work Through Procrastination and Writer's Block

If you can't start writing or you struggle to draft even a few words, you may have writer's block. Some cases arise from anxieties about school and its pressures; if that might be you, see a counselor. But most cases have causes you can address:

You feel so intimidated by the task that you don't know where to begin. If so, divide the process into small tasks; then focus on one step at a time.

You have set no goals or goals that are too high. If so, create a routine that sets goals you can meet, then use devices such as a progress chart or regular meetings with a writing partner.

You feel you must make every sentence or paragraph perfect before you move to the next one. You can avoid some obsession with perfection if you write informally along the way, telling yourself you are writing only to help you think on paper. In any event, know that every researcher compromises on perfection to get the job done.

If you have problems like these, go to the student learning center. Advisers there have worked with every kind of procrastinator and blocked writer and can give you advice tailored to your problem.

On the other hand, some cases of writer's block may really be opportunities to let your ideas simmer in your subconscious while they combine and recombine into something new and surprising. If you're stuck but have time (another reason to start early), let your

unconscious work on the problem while you do something else for a day or two. Then return to the task to see if you can get back on track.

13 Organizing Your Argument

> This chapter presents a procedure for organizing and revising your drafts so that your argument is as clear to your readers as it is to you. At first this procedure may seem a bit mechanical, but that's its virtue. If you follow it one step at a time, you can analyze and improve the organization of your draft efficiently and reliably.

Some new researchers think that once they've churned out a draft, they're done. The best writers know better. They write a first draft not to show to readers, but to discover what case they can actually make for their point and whether it stands up to their own scrutiny. Then they revise and revise until they think their readers will agree with their argument too. Revising for readers is hard, though, because we all know our own work too well to read it as others will. You must first know what readers look for, then determine whether your draft helps them find it. To do that, you have to analyze your draft objectively; otherwise, you'll just read into it what you want your readers to get out of it.

Some writers resist *any* revising for readers, fearing that if they accommodate their readers, they compromise their integrity. They think that the truth of their discovery should speak for itself, and if readers have a hard time understanding it, well, they just have to work harder. But revising for readers doesn't mean pandering to them. In fact, you only improve your ideas when you imagine drawing readers into an amiable conversation in which they engage your beliefs as you engage theirs.

In this chapter, we show you how to diagnose and revise your organization and argument so that readers get out of it what you think you put into it.

13.1 THINKING LIKE A READER

Readers do not read word by word, sentence by sentence, as if they were adding up beads on a string. They want to begin with a sense of the whole, its structure, and, most important, why they should read your paper in the first place. Then they use that sense of the whole and its aims to interpret its parts. So when you revise, it makes sense to attend first to your overall organization, then to sections, then to the coherence of your paragraphs and the clarity of your sentences, and, finally, to matters of spelling and punctuation. In reality, of course, no one revises so neatly. We all revise as we go, correcting spelling as we rearrange our argument, clarifying evidence as we revise a

paragraph. But when you systematically revise top-down, from global structure to local sentences and words, you are more likely to read as your readers will than if you start at the bottom, with words and sentences, and work up. You will also revise more efficiently, because you won't spend time fine-tuning whole sections that you later decide to rearrange or even cut.

13.2 REVISING YOUR FRAME

Readers must recognize three things instantly and unambiguously:

where your introduction ends

where your conclusion begins

what sentence in one or both states your main point

To ensure that readers recognize these, do this:

Put an extra space after your introduction and before your conclusion. If your field approves, put headings at those joints so that readers can't miss them.

State your main point at or close to the end of your introduction. Then compare that point with the one in your conclusion. They should at least not contradict each other. Nor should they be identical: make the one in your conclusion more specific and contestable.

Include in the point sentence of your introduction key terms that name concepts and themes that run through your paper. Do this not only when your point sentence announces your main claim but also if it is just a launching point (see 12.1.1, 16.4.2).

For example, consider this introductory paragraph (much abbreviated). What does it imply about the point of the paper?

> In the eleventh century, the Roman Catholic Church initiated several Crusades to recapture the Holy Land. In a letter to King Henry IV in the year 1074, Gregory VII urged a Crusade but failed to carry it out. In 1095 his successor, Pope Urban II, gave a speech at the Council of Clermont in which he also called for a Crusade, and in the next year, in 1096, he initiated the First Crusade. In this paper I will discuss the reasons for the Crusades.

The closest thing to a point sentence appears to be that vague last one. But it merely announces the Crusades as a topic.

Here are the first few sentences from the first paragraph of the conclusion (again, much abbreviated). What is its point?

The point sentence in the conclusion seems to be the second one ("But their efforts . . . apart"). That point is specific, substantive, and plausibly

contestable. We could add a shortened version of that point to the end of the introduction, or we could write a new sentence for the introduction that, while not revealing the full point, would at least introduce the key concepts of the paper more clearly:

> In a series of documents, the popes proposed their Crusades to restore Jerusalem to Christendom, but their words suggest other issues involving **political concerns** about European and Christian **unity** in the face of **internal forces** that were **dividing** them.

13.3 REVISING YOUR ARGUMENT

Once you determine that the outer frame of your paper will work for readers, analyze its argument section by section. We know this seems to repeat earlier steps, but once drafted, your argument may look different from the way it did in your storyboard or outline.

13.3.1 Identify the Substance of Your Argument

Does the structure of your argument match the structure of your paper?

> **Is each reason supporting your main claim the point of a section of its own?** If not, the organizing points of your paper may conflict with the structure of your argument.
>
> **Do you strike the right balance between reasons and evidence?** In each section, identify everything that counts as evidence, all the summaries, paraphrases, quotations, facts, figures, graphs, tables— whatever you report from a primary or secondary source. If what you identify as evidence and its explanation are less than a third or so of a section, you may not have enough

evidence to support your reasons. If you have lots of evidence but few or no reasons, you may have just a data dump.

13.3.2 Evaluate the Quality of Your Argument

What might cause your readers to reject your argument?

Is your evidence reliable? In chapter 9, we said that evidence should be accurate and precise, sufficient and representative, and authoritative (see 9.4). If you are close to a final draft, it may be too late to find more or better evidence. But you can check other matters:

Check your data and quotations against your notes.

Make sure your readers see how quotations and data relate to your claim.

Be sure you haven't skipped intermediate subreasons between a major reason and its supporting evidence.

Have you appropriately qualified your argument? Can you drop in a few appropriate hedges like *probably, most, often, may*, and so on?

Does your paper read like a conversation with peers or colleagues asking hard but friendly questions? If it reads like a contest between

competitors or if you haven't acknowledged alternative views or objections, go back through your argument and imagine a sympathetic but skeptical reader asking, *Why do you believe that? Are you really making that strong a point? Could you explain how this evidence relates to your point? But what about . . . ?* (Review 10.1–2.) Then answer the most important ones.

Have you expressed all the warrants you should? There is no easy test for this question. Once you identify each section and subsection of your argument, write in the margin its most important unstated warrant. Then ask whether readers will accept it. If not, you have to state and support it.

13.4 REVISING THE ORGANIZATION OF YOUR PAPER

Once you are confident about the outer frame of your paper and the substance of its argument, make sure that readers will find the whole paper coherent. To ensure that they do, check the following:

Do key terms run through your whole paper?

Circle key terms in the main point in your introduction and conclusion. Circle those same terms in the body of your paper.

Underline other words related to concepts named by those circled terms.

Here again is that concluding paragraph about the Crusades, with its keywords circled:
If readers don't see at least one of those key terms in most paragraphs, they may think your paper wanders.

If you find a passage that lacks key terms, you might shoehorn a few in. If that's difficult, you may have gotten off track and need to rewrite or even discard that passage.

Is the beginning of each section and subsection clearly signaled? Could you quickly and confidently insert headings to mark where your major sections begin? If you can't, your readers probably won't recognize your organization. If you don't use headings, add an extra space at the major joints.

Does each major section begin with words that signal how that section relates to the one before it? Readers must not only recognize where sections begin and end, but understand why they are ordered as they are. Have you signaled the logic of your order with phrases such as

More important . . . , The other side of this issue is . . . , Some have objected that . . . , One complication is . . . , or even just *First, . . .*
Second, . . . ?

Is it clear how each section relates to the whole? For each section ask: *What question does this section answer?* If it doesn't answer one of the five questions whose answers constitute an argument (7.1), does it create a context, explain a background concept or issue, or help readers in some other way? If you can't explain how a section relates to your point, consider cutting it.

Is the point of each section stated in a brief introduction (preferably) or in its conclusion? If you have a choice, state the point of a section at the end of its introduction. Never bury it in the middle. If a section is longer than four or five pages, you might conclude by restating your point and summarizing your argument, especially if your argument is fact-heavy with names, dates, or numbers.

Do terms that unify each section run through it? Each section needs its own key terms to unify and uniquely distinguish it from the others. To test that, create a heading that uniquely distinguishes that section from all the others. Repeat step 1 for each section: find the point sentence and circle in it the key terms for that section (do not circle terms you circled in the main point of the whole paper). Check whether those terms run through that section. If you find no terms that differ from those running through the whole, then your readers may not see what new ideas that section contributes. If you find that some of the terms also run through another section, the two sections may only repeat each another. If so, consider combining them.

13.5 CHECKING YOUR PARAGRAPHS

You may have learned that every paragraph should begin with a topic sentence and be directly relevant to the section in which it appears. Those are good rules of thumb, but applied too strictly they can make your writing seem stiff. The important thing is to structure and arrange your paragraphs so that they lead your readers through the conversation you are orchestrating. Open each paragraph with a sentence or two that signal its key concepts. Doing that will help readers better understand what follows. If your opening doesn't also state the paragraph's point, then your last sentence should. Never bury the point in the middle.

Paragraphs vary in length depending on the type of writing in which they appear. For example, they tend to be shorter in brief research reports and longer in, say, critical essays or book chapters. Paragraphs should be long enough to develop their points but not so long that readers lose focus, which is simply to say they should be "just right" (another Goldilocks moment). If you find yourself stringing together choppy paragraphs of just a few lines, it may mean your points are not well developed. If you find yourself rolling out very long paragraphs of more than a page, it may mean that you are digressing. You can sometimes vary the lengths of your paragraphs for effect: use short paragraphs to highlight transitions or statements that you want to emphasize.

Some writers find it more natural to think not about their paragraphs but about their paragraph breaks. Use your paragraph breaks as you would the pauses in a conversation, for example, to rest after you make a strong point, to give your reader a moment to process a complex passage, or to signal a transition to a new idea.

13.6 LETTING YOUR DRAFT COOL, THEN PARAPHRASING IT

If you start your project early, you'll have time to let your revised draft cool. What seems good one day often looks different the next. When you return to it, don't read straight through; skim its top-level parts: its introduction, the first paragraph of each major section, and its conclusion. Then, based only on what you've read, paraphrase it for someone who hasn't read it. Does the paraphrase hang together? Does it accurately sum up your argument? Even better, ask someone else to skim your paper and summarize it: how well that reader summarizes your argument will predict how well your final readers will understand it. Finally, always consider your reader's advice, even if you do not follow every suggestion.

Quick Tip: Abstracts

An abstract is a paragraph that tells readers what they will find in a paper, an article, or a report. It should be shorter than an introduction but do three things that an introduction does:

state the research problem

announce key themes

state the main point or a launching point that anticipates the main point

Abstracts differ from field to field, and some fields don't use them at all. But most abstracts follow one of three patterns. To determine which suits your field, ask your teacher or look in a standard journal. Here are examples of these patterns, adapted from the abstract to a recent article in political science (the third is the original).

1. Context + Problem + Main Point

This kind of abstract is an abbreviated introduction. It begins with a sentence or two to establish the context of previous research, continues with a sentence or two to state the problem, and concludes with the main result of the research.

> Scholars have long assumed that democracy improves the quality of life for its citizens.*context* But recent research has called this orthodoxy into question, suggesting that there is little or no relationship between a country's regime type and its level of human development.*problem* In this article, we argue that democracy can be shown to advance human development, but only when considered as a historical phenomenon.*main point*

2. Context + Problem + Launching Point

This pattern is the same as the previous one, except that the abstract states not specific results, only their general nature (see 12.1.1).

> Scholars have long assumed that democracy improves the quality of life for its citizens,*context* but recent research has called this orthodoxy into question, suggesting that there is little or no relationship between a country's regime type and its level of human development.*problem* In this article, we review this body of work, develop a series of causal pathways through which democracy might improve social welfare, and test two hypotheses: (a) that a country's level of democracy in a given year affects its level of human development and (b) that its stock of democracy over the past century affects its level of human development.*launching point*

3. Summary

A summary also states the context and the problem; but before reporting the result, it summarizes the rest of the argument, focusing either on the evidence supporting the result or on the procedures and methods used to achieve it. Here is the abstract as it was published:

> Does democracy improve the quality of life for its citizens? Scholars have long assumed that it does,*context* but recent research has called this orthodoxy into question.*problem* This article reviews this body of work, develops a series of causal pathways through which democracy might improve social welfare, and tests two hypotheses: (a) that a country's level of democracy in a given year affects its level of human development and (b) that its stock of democracy over the past century affects its level of human development. Using infant mortality rates as a core measure of human development, we conduct a series of time-series—cross-national statistical tests of these two hypotheses. We find only slight evidence for the first

> proposition, but substantial support for the second.*summary* Thus, we argue that the best way to think about the relationship between democracy and development is as a time-dependent, historical phenomenon.*main point*

Since this version includes a summary, the statement of the problem is slightly abbreviated. Notice, too, the opening sentence. Rather than stating the context in standard fashion, this version begins with what seems to be a rhetorical question—"Does democracy improve the quality of life for its citizens?"—just so it can then upend the implied answer. Even as compressed a form as an abstract allows for the occasional stylistic flourish.

A final tip: if you publish your research, some researcher down the line may want to find it, using a search engine that looks for keywords. So imagine searching for your paper yourself. What keywords would you look for? Put them in your title and the first sentence of your abstract.

14 Incorporating Sources

Nothing sets the experienced researcher apart from the beginner more than the effective use of sources. But even a beginning researcher can project an ethos of credibility by following a few principles that show respect both for the writer's sources and for readers.

14.1 QUOTING, PARAPHRASING, AND SUMMARIZING APPROPRIATELY

You must build your paper out of your own words that reflect your own thinking. But you'll support much of that thinking with quotations, paraphrases, and summaries. As we've said, different fields use them differently: researchers in the humanities quote more than do social and natural scientists, who typically paraphrase and summarize. But you must decide each case for itself, depending on how you use the information. Here again are some principles:

Summarize when details are irrelevant or a source isn't important enough to warrant much space.Paraphrase when you can state what a source says more clearly or concisely or when your argument depends on the details in a source but not on its specific words.

Quote for these purposes:

—The words themselves are evidence that backs up your reasons. —The words are from an authority who backs up your claims. —The words are strikingly original or express your key concepts so compellingly that the quotation can frame an extended discussion. —A passage states a view that you disagree with, and to be fair you want to state it exactly.

For every summary, paraphrase, or quotation you use, cite its bibliographic data in the appropriate style (see 14.5 and the Quick Tip). Under no circumstances stitch together downloads from the Web with a few sentences of your own. Teachers grind their teeth reading such papers, dismayed by their lack of original thinking. Readers of advanced projects reject such patchworks out of hand.

14.2 INTEGRATING DIRECT QUOTATIONS INTO YOUR TEXT

Signal direct quotations in one of two ways:

For four or fewer quoted lines, run them into your text, surrounded by quotation marks.

For five or more lines, set them off as an indented block.

You can insert run-in and block quotations in your text in three ways.

Drop in the quotation with a few identifying words (*Author says*, *According to Author*, *As Author puts it*, etc.).

> Diamond says, “The histories of the Fertile Crescent and China . . . hold a salutary lesson for the modern world: circumstances change, and past primacy is no guarantee of future primacy” (417).

• Introduce the quotation with a sentence that interprets or characterizes it.

> Diamond suggests what we can learn from the past: “The histories of the Fertile Crescent and China . . . hold a salutary lesson for the modern world . . .” (417).

Weave the grammar of the quotation into the grammar of your own sentence.

> Diamond suggests that the chief “lesson for the modern world” in the history of the Fertile Crescent and China is that “circumstances change, and past primacy is no guarantee of future primacy” (417).

You can modify a quotation, so long as you don’t change its meaning and you signal deletions with three dots (called *ellipses*) and changes with square brackets. This sentence quotes the original intact:

> Posner focuses on religion not for its spirituality, but for its social functions: “A notable feature of American society is religious pluralism, and we should consider how this relates to the efficacy of governance by social norms in view of the historical importance of religion as both a source and enforcer of such norms” (299).

This version modifies the quotation to fit the grammar of the writer’s sentence:

In discussing religious pluralism, Posner says that “a notable feature of American society is [our] religious pluralism” and notes how social norms affect “the efficacy of governance . . . in view of the historical importance of religion as both a source and enforcer of such norms” (299).

14.3 SHOWING READERS HOW EVIDENCE IS RELEVANT

By this point you may be so sure that your evidence supports your reasons that you’ll think readers can’t miss its relevance. But evidence never speaks for itself, especially not long quotations or complex sets of numbers. You must speak for such evidence by introducing it with a sentence stating what you want your readers to get out of it. For example, this passage bases a claim about Hamlet on the evidence of the following quotation:

> When Hamlet comes upon his stepfather, Claudius, at prayer, he demonstrates cool rationality:*claim*
>
> > Now might I do it [kill him] pat, now ’a is a-praying, And now I’ll do’t. And so ’a goes to heaven,
> >
> > And so am I reveng’d. . . . [Hamlet pauses to think] [But this] villain kills my father, and for that, I, his sole son, do this same villain send
> > To heaven.
> > Why, this is hire and salary, not revenge. (3.3)*report of evidence*

It is not clear how that quotation supports the claim, because nothing in it specifically refers to Hamlet’s rationality. In contrast, compare this:

> When Hamlet comes upon his stepfather, Claudius, at prayer, he demonstrates cool rationality.*claim* **He impulsively wants to kill Claudius**
>
> **but pauses to reflect: if he kills Claudius while praying, he will send his soul to heaven, but he wants Claudius damned to hell, so he coolly decides to kill him later:***reason*
>
> > Now might I do it [kill him] pat, . . .*report of evidence*

Now we see the connection. (Do the same with tables and figures; see 15.3.1.)

Lacking a reason that explains the evidence, readers may not see what it *means*. So introduce complex evidence with a sentence explaining it.

14.4 THE SOCIAL IMPORTANCE OF CITING SOURCES

14.4.1 Citations Benefit You

Citations protect you from a charge of plagiarism, but beyond that narrow self-interest, correct citations contribute to your ethos. First, readers don't trust sources they can't find. If they can't find your sources because you failed to document them adequately, they won't trust your evidence; and if they don't trust your evidence, they won't trust your paper—or you. Second, many experienced researchers think that if a writer can't get the little things right, he can't be trusted on the big ones. Getting the details of citations right distinguishes reliable, experienced researchers from careless beginners. Finally, teachers assign research papers to help you learn how to integrate the research of others into your own thinking. Proper citations show that you have learned one important part of that process.

14.4.2 Citations Help Your Readers

Readers use citations before, while, and after they read your paper. Before, many experienced readers will preview your paper by skimming your list of sources to see whose work you read and whose you didn't. As they read, readers use citations to decide how much they can trust the reliability, currency, and completeness of your evidence. Papers with outdated or only very recent citations of sources found on the Internet alert readers to be skeptical. But papers whose citations show range and depth in engaging sources reassure readers. Finally, just as you depended on sources to start your bibliographical trail, so will some readers depend on *your* list to start theirs.

14.4.3 Citations Honor Your Sources

Finally, citations honor your sources. Few academic researchers get rich writing on topics such as "Ohio education, 1825–1850." Their reward isn't money; it's the reputation they earn for doing good work and the pleasure they take in knowing that colleagues respect it enough to cite it—even in disagreement. Your sources may never know you cited them, but that doesn't matter. When you cite sources, you honor them by acknowledging your intellectual debts.

In short, when you cite sources fully and accurately, you sustain and enrich the sense of community that gives written research both its scholarly and social value.

14.5 FOUR COMMON CITATION STYLES

It would be easier if we all cited sources in the same style, but we don't. For academic research, there are two basic patterns, each with two common versions. The many differences among the styles can seem picky and irrelevant, but they matter to readers. So be sure to find out which style you should use, and consult the proper guide for your style. (You can also find reliable online guides.)

Many researchers today use citation software that automatically generates citations in the style they choose. Some teachers encourage this practice. Others feel that students should not rely on such assistance, but rather learn the details. If you don't know where your teacher stands on the issue, ask.

14.5.1 Two Basic Patterns: Author-Title and Author-Date

All citation forms begin with the name of the author, editor, or whoever else is responsible for the source. We distinguish styles by what follows the author. If the title follows the author, the style is called *author-title.*

Anes, Lee J. ***A Story of Ohio: Its Early Days.*** Boston: Hobson Press, 1988.

This pattern is common in the humanities.

If the date follows the author, the style is called *author-date.*

Anes, Lee. 1988. *A story of Ohio: Its early days.* Boston: Hobson Press.

This pattern is used in the natural sciences and most of the social sciences, because in those rapidly changing fields, readers want to know quickly how old a source is. They can spot dates more easily when they come at the beginning of a citation.

14.5.2 Two Author-Title Styles

There are two versions of author-title style, each based on a well-known style manual.

Chicago Author-Title Style: *The Chicago Manual of Style*, 16th ed. (Chicago: University of Chicago Press, 2010). It is sometimes called Turabian style, based on a widely used condensed manual: Kate L. Turabian, *A Manual for Writers of Research Papers, Theses, and Dissertations*, 8th ed. (Chicago: University of Chicago Press, 2013). When using this style, you list your sources in a bibliography and cite them in your text with footnotes or endnotes.

MLA Style: *MLA Handbook for Writers of Research Papers*, 8th ed. (New York: Modern Language Association, 2016). You are mostly likely to learn MLA (Modern Language Association) style in a literature or composition course. In this style, you give a list of works cited and cite your sources parenthetically in your text.

These styles differ only in minor details, but those details matter, so be sure to consult the proper style guide.

14.5.3 Two Author-Date Styles

There are two versions of author-date style, each based on a well-known style manual.

Chicago Author-Date Style: This style is also described in *The Chicago Manual of Style* and sometimes called Turabian style. When using it, you list your sources in a bibliography but cite them parenthetically in your text.

APA Style: *Publication Manual of the American Psychological Association*, 6th ed. (Washington, DC: American Psychological Association, 2009). This style uses parenthetical citations as well.

Like the author-title styles, these styles differ only in minor details. But again, those details matter, so be sure to follow the prescriptions of the style you use down to the last comma, space, and capital letter.

14.6 GUARDING AGAINST INADVERTENT PLAGIARISM

It will be as you draft that you risk the worst mistake a researcher can make: you lead readers to think that you're trying to pass off as your own the work of another writer. Do that and you risk an accusation of plagiarism, a charge that, if sustained, could mean, for a professional writer, an irreparably damaged reputation or, for a student writer, a failing grade or even expulsion. Students know they cheat when they put their name on a paper purchased on the Internet or copied from a fraternity or sorority file. Most also know they cheat when they pass off as their own long passages copied directly from their sources. For those cases, there's nothing to say beyond *Don't*.

But many inexperienced writers don't realize when they risk being charged with plagiarism because they are careless or misinformed. You run that risk when you do any of the following:

You quote, paraphrase, or summarize a source but fail to cite it.

You use ideas or methods from a source but fail to cite it.

You use the exact words of a source and you do cite it, but you fail to put those words in quotation marks or in a block quotation.

You paraphrase a source and cite it, but you use words so similar to those of the source that anyone can see that as you paraphrased, you followed the source word by word.

14.6.1 Cite the Source of Every Quotation, Paraphrase, or Summary

You must cite your source every time you use its words, even if you only paraphrase or summarize them. If the quotations, paraphrases, or summaries come from different pages of your sources, cite each one individually. If a paraphrase or summary extends over several paragraphs, cite it only once at the end. (See the Quick Tip at the end of this chapter for guidance on citing sources in your text.)

The most common problem is not that students don't know that they should cite a source, but that they lose track of which words are theirs and which are borrowed. That's why we urged you in chapter 6 to distinguish in your notes between quotations, paraphrases, and summaries of sources and your own analyses, thoughts, and commentary. Always include the citation as soon as you add a quotation because you may

not remember to do so later. Be especially careful to cite a paraphrase or summary as you draft it; otherwise, you may not even remember that it originated with a source.

14.6.2 Signal Every Quotation, Even When You Cite Its Source

Even if you cite the source, readers must know exactly which words are not yours, even if they are *as few as a single line*. It gets complicated, however, when you copy less than a line. Read this:

> "Because technology begets more technology, the importance of an invention's diffusion potentially exceeds the importance of the original invention. Technology's history exemplifies what is termed an autocatalytic process: that is, one that speeds up at a rate that increases with time, because the process catalyzes itself" (Diamond 1998, 301).

If you were writing about Jared Diamond's ideas, you would probably have to use some of his words, such as *the importance of an invention*. But you wouldn't put that phrase in quotation marks, because it shows no originality of thought or expression.

Two of his phrases, however, are so striking that they do require quotation marks: *technology begets more technology* and *autocatalytic process*. For example:

> The power of technology goes beyond individual inventions because "technology begets more technology." It is, as Diamond puts it, an "autocatalytic process" (301).

Once you cite those words, you can use them again without quotation marks or citation:

> As one invention begets another one and that one still another, the process becomes a self-sustaining catalysis that spreads across national boundaries.

This is a gray area: words that seem striking to some are not to others. If you put quotation marks around too many ordinary phrases, readers might think you're naive, but if you fail to use them when readers think you should, they may suspect you of plagiarism. Since it's better to seem naive than dishonest, especially early in your career, use quotation marks freely. (You must, however, follow the standard practices of your field. Lawyers, for example, often use the exact language of a statute or judicial opinion with no quotation marks.)

14.6.3 Don’t Paraphrase Too Closely

You paraphrase appropriately when you represent an idea in your own words more clearly or pointedly than the source does. But readers will think that you plagiarize if they can match your words and phrasing with those of your source.

For example, here is a passage from Malcolm Gladwell’s *Outliers: The Story of Success*:

> “Achievement is talent plus preparation. The problem with this view is that the closer psychologists look at the careers of the gifted, the smaller the role innate talent seems to play and the bigger the role preparation seems to play” (38).

This too-close paraphrase is plagiarism:

> Success seems to depend on a combination of talent and preparation. However, when psychologists closely examine the gifted and their careers, they discover that innate talent plays a much smaller role than preparation (Gladwell 38).

This paraphrase does not plagiarize:

> As Gladwell observes, summarizing studies on the highly successful, we tend to overestimate the role of talent and underestimate that of preparation (38).

This phrasing is not a close match to the original. And notice that we chose not to put *talent* or *preparation* in quotes. We decided that those words are common enough to use as our own.

To avoid seeming to plagiarize, read the passage, look away, think about it for a moment; *then still looking away*, paraphrase it in your own words. Then check whether you can run your finger along your sentence and find synonyms for the same ideas in the same order in your source. If you can, try again.

14.6.4 Usually Cite a Source for Ideas Not Your Own

Most of our ideas are based on sources somewhere in history. But readers don’t expect you to cite a source for the idea that the world is round. They do, however, expect you to cite a source for an idea when (1) the idea is associated with a specific person *and* (2) it’s new enough *not* to be part of a field’s common knowledge. For example, psychologists

claim that we think and feel in different parts of our brains. But no reader would expect you to cite a source for that idea, because it's so familiar that no one would think you are implying it is yours. On the other hand, some psychologists argue that emotions are crucial to rational decision making. That idea is so new and tied to particular researchers that you'd have to cite them.

14.6.5 Don't Plead Ignorance, Misunderstanding, or Innocent Intentions

Some students sincerely believe that they don't have to cite material downloaded from the Web because it's free and publicly available. They are wrong. Other students defend themselves by claiming they didn't *intend* to mislead. Well, we read words, not minds. Here is how to think about this issue: If the person you borrowed from read your writing, would she recognize your words or ideas as her own, including paraphrases, summaries, or even general ideas or methods? If so, you must cite that source and enclose any of her exact words in quotation marks or set them off in a block quotation. No exceptions, no excuses.

Why the Fuss over Honest Mistakes?

Some students wonder why teachers are so unforgiving of honest slip-ups. *What's the harm?*

First, they harm your credibility. One failure to acknowledge a source can lead readers to doubt your honesty, a career-ending judgment for an advanced student. But they matter even to a beginner. Your teacher is preparing you to write not for her but for others who will have only your words to judge your ethos. She needs to see that you know not only how to use sources thoughtfully but how to acknowledge them carefully and completely.

Other students think plagiarism is a victimless offense. It is not. Recently, two young scholars were praised when they used in a new way

methods and ideas published twenty years earlier. They mentioned their source in passing but failed to acknowledge their specific debt fully. In doing so, they not only claimed undeserved credit but deprived the older scholar of credit he deserved. Worse, by omitting the bibliographical trail that led to his work, they kept readers from rediscovering it. The credit he lost cost him not only reputation but also perhaps grants, promotions, and ultimately higher pay.

Quick Tip: Indicating Citations in Your Paper

You must indicate in your paper every place where you use a source. The three of the four most common citation styles—Chicago author-date style, MLA style, and APA style (see 14.5)—use parenthetical citations that direct readers to specific pages in the source, with enough information to find the corresponding entry in a list of sources.

> Some have claimed that Castro would reform Cuban politics (Smith 1999, 233).

If you use Chicago author-title style, you may instead use a raised number, or superscript, that directs readers to a correspondingly numbered note at the bottom of the page or at the end of the paper.

> Some have claimed that Castro would reform Cuban politics.[5]
>
> 5. George Smith, *Travels in Cuba* (Boston: Hasbro Press, 1999), 233.

PARENTHETICAL CITATIONS

A parenthetical (or in-text) citation includes only the information a reader needs to locate the source in a list of sources at the end of your paper. Depending on your field, that list will be called your bibliography, references, or works cited. What you include in an in-text citation depends first on whether you use author-title or author-date citation style. For example, here are the author-title forms for citing a single-author work if you do not mention the author in your sentences and you have only one work by that author in your list of sources:

Chicago Author-Title (Author, page[s])

> Only one writer provides data on this matter (Kay, 220).

MLA (Author page[s])

> Only one writer provides data on this matter (Kay 220).

If in your list of sources you list more than one publication for an author, you must add a short title so that readers will know which publication you are citing. In this case, the format in both styles is the same:

Chicago Author-Title and MLA (Author, *Short Title*, page[s]) Only one writer provides data on this matter (Kay, *A Life*, 220).

In author-date style, you must add the date to every citation:

Chicago Author-Date (Author date, page[s])

Only one writer provides data on this matter (Kay 2006, 220).

APA (Author, date, p. xxx)

Only one writer provides data on this matter (Kay, 2006, p. 220).

If you have mentioned the author, drop the name from the citation:

Chicago Author-Date: Kay is the only writer who provides data on this matter (2006, 220).

MLA: Kay is the only writer who provides data on this matter (220).

APA: Kay is the only writer who provides data on this matter (2006, p. 220).

There are additional rules for citations if a work has more than one author, if you cite more than one work by the same author, and so on. For these, consult the appropriate guide.

NOTES AND BIBLIOGRAPHY

In Chicago author-title style, you use notes—footnotes at the bottom of the page or endnotes following the paper—to direct readers to sources in a bibliography. Notes include the same information as a bibliography entry, but the form differs in three ways: notes list names not last name, first name, but first name last name; individual elements of a note are separated by commas rather than periods; and publication data are in parentheses.

NOTE FORM: 5. George Smith, *Travels in Cuba* (Boston: Hasbro Press, 1999), 233.

BIBLIOGRAPHY FORM: Smith, George. *Travels in Cuba*. Boston: Hasbro Press, 1999.

For details, consult the Turabian guide or *The Chicago Manual of Style*. Researchers are increasingly using parenthetical citations rather than notes,

because notes duplicate the information listed in a bibliography. If in doubt, ask your teacher.

15 Communicating Evidence Visually

Most readers grasp quantitative evidence more easily in tables, charts, and graphs than they do in words. But some visual forms suit particular data and messages better than others. In this chapter, we show you how to choose the graphic form that best helps readers both grasp your data and understand how they support your argument.

15.1 CHOOSING VISUAL OR VERBAL REPRESENTATIONS

When the data are few and simple, readers can grasp them as easily in a sentence as in a table:

> In 2013, on average, men earned $50,033 a year and women $39,157, a difference of $10,876.

TABLE 15.1. Male-female salaries ($), 2013

But if you present more than a few numbers, readers will struggle to keep them straight:

> Between 1970 and 2010, the structure of families changed in two ways. In 1970, 85 percent of families had two parents, but in 1980 that number declined to 77 percent, then to 73 percent in 1990, to 68 percent in 2000, and to 64 percent in 2010. The number of one-parent families rose, particularly families headed by a mother. In 1970, 11 percent of families were headed by a single mother. In 1980, that number rose to 18 percent, in 1990 to 22 percent, and to 23 percent in 2000. There were some marginal changes among single fathers (headed 1 percent of the families in 1970, 2 percent in 1980, 3 percent in 1990, and 4 percent in 2000). Families headed by no adult remained stable at 3–4 percent.

A note on terminology: We use the term *graphics* for all visual representations of data. Traditionally, graphics are divided into *tables* and *figures.* A table is a grid with columns and rows. Figures are all other graphic forms, including graphs, charts, photographs, drawings, and diagrams. Figures that present quantitative data are divided into *charts* and *graphs.* Charts typically consist of bars, circles, points, or other shapes; graphs consist of continuous lines.

15.2 CHOOSING THE MOST EFFECTIVE GRAPHIC

When you graphically present data as complex as in that paragraph, the most common choices are tables, bar charts, and line graphs, each of which has a distinctive rhetorical effect.

A table seems precise and objective. It emphasizes discrete numbers and requires readers to infer relationships or trends on their own (unless you state them in an introductory sentence)

Charts and line graphs present a visual image that communicates values less precisely than do the exact numbers of a table but with more impact. But charts and graphs also differ. A bar chart emphasizes contrasts among discrete items:

How many choices you should consider depends on your experience. If you're new to quantitative research, limit your choices to basic tables, bar charts, and line graphs. Your computer software offers more choices, but ignore those that you aren't familiar with. If you're doing advanced research, readers will expect you to draw from a larger range of graphics favored in your field. In that case, consult table 15.7, which describes the rhetorical uses of other common forms. You may have to consider even more creative ways of representing data if you are writing a dissertation or article in a field that routinely displays complex relationships in large data sets. (See the bibliography for additional resources.) What follows is a guide to the basics of tables, charts, and graphs.

15.3 DESIGNING TABLES, CHARTS, AND GRAPHS

Computer programs create graphics so dazzling that many writers let their software determine their design. That's a mistake. Readers don't care how fancy a graphic looks if it doesn't communicate your point clearly. Here are some principles for designing effective graphics. To follow them, you may have to change default settings in your graphics software.

15.3.1 Frame Each Graphic to Help Readers Understand It

A graphic representing complex numbers rarely speaks for itself. You must frame it to show readers what to see in it and how to understand its relevance to your argument:

Label every graphic in a way that describes its data. For a table, the label is called a *title* and is set flush left above the table; for a figure, the label is called a *legend* and is set flush left below the figure. Keep titles and legends short but descriptive enough to distinguish every graphic from every other one.

• Avoid making the title or legend a general topic.

NOT: Heads of households

BUT: Changes in one- and two-parent heads of households, 1970–2010

Do not give background information or characterize what the data imply.

NOT: Weaker effects of counseling on depressed children before professionalization of staff, 1995–2004

BUT: Effect of counseling on depressed children, 1995–2004

Be sure labels distinguish graphics presenting similar data. **NOT:** Risk factors for high blood pressure

BUT: Risk factors for high blood pressure among men in Cairo, Illinois

OR: Risk factors for high blood pressure among men in St. Louis, Missouri

Insert into the table or figure information that helps readers see how the data support your point. For example, if numbers in a table show a trend

and the size of the trend matters, indicate the change in a final column. If a line on a graph changes in response to an influence not mentioned on the graph, add text to the image to explain it.

> Although reading and math scores declined by almost 100 points following redistricting, that trend reversed when supplemental math and reading programs were introduced.

Introduce the table or figure with a sentence that explains how to interpret it. Then highlight what it is in the table or figure that you want readers to focus on, particularly any number or relationship mentioned in that introductory sentence. For example, we have to study table 15.3 to understand how it supports the sentence before it:

> Most predictions about increased gasoline consumption have proved wrong.

15.3.2 Keep All Graphics as Simple as Their Content Allows

Some guides encourage you to cram as much data as you can into a graphic. But readers want to see only the data relevant to your point, free of distractions. For all graphics:

Include only relevant data. If you include data only for the record, label it accordingly and put it in an appendix.

Keep the visual impact simple.

Box a graphic only if you group two or more figures.

Do not color or shade the background.

FOR TABLES

Never use both horizontal and vertical dark lines to divide columns and rows. Use light gray lines only if the table is complex or you want to direct your reader's eyes in one direction to compare data.

For tables with many rows, lightly shade every fifth row.

FOR CHARTS AND GRAPHS

Use background grid lines only if the graphic is complex or readers need to see precise numbers. Make them light gray.

Color or shade lines or bars only to show a contrast. Use color only if the text will be printed in color and not photocopied later. (Black-and-white photocopies make many colors look alike.)

Never use iconic bars (for example, images of cars to represent automobile production) or add a third dimension merely for effect. Both look amateurish and can distort how readers judge values.

Plot data on three dimensions only when your readers are familiar with such graphs and you cannot display the data in any other way.

Use clear labels.

Label all rows and columns in tables and both axes in charts and graphs.

Use tick marks and labels to indicate intervals on the vertical axis of a graph.

If possible, label lines, bar segments, and the like on the image rather than in a legend set to the side. Use a legend only if labels would make the image too complex to read.

When specific numbers matter, add them to bars or segments in charts or to dots on lines in graphs.

15.4 SPECIFIC GUIDELINES FOR TABLES, BAR CHARTS, AND LINE GRAPHS

15.4.1 Tables

Tables with lots of data can seem dense, so organize them to help readers.

Order the rows and columns by a principle that lets readers quickly find what you want them to see. Do not automatically choose alphabetic order.

Round numbers to a relevant value. If differences of less than 1,000 don't matter, then 2,123,499 is irrelevantly precise.

Sum totals at the bottom of a column or at the end of a row, not at the top or left.

15.4.2 Bar Charts

Bar charts communicate as much by visual impact as by specific numbers. But bars arranged in no pattern imply no point. If possible, group and arrange bars to create an image that matches your message. For example, look at figure 15.4 in the context of the explanatory sentence before it. The items are listed alphabetically, an order that doesn't help readers see the point.

Most of the world's deserts are concentrated in North Africa and the Middle East

Figure 15.4. World's ten largest deserts

In contrast, figure 15.5 supports the claim with a coherent image.

Most of the world's deserts are concentrated in North Africa and the Middle East.

Figure 15.5. World distribution of large deserts

In standard bar charts, each bar represents 100 percent of a whole. But sometimes readers need to see specific numbers for parts of the whole. You can do that in two ways:

Divide the bars into proportional parts, creating a "stacked" bar.

Give each part of the whole its own bar, then group the parts into clusters.

Use stacked bars only when you want readers to compare whole values for different bars rather than their divided segments, because readers can't easily compare the proportions of segments by eye alone. If you do use stacked bars, do this:

Arrange segments in a logical order. If possible, put the largest segment at the bottom in the darkest shade.

Label segments with specific numbers and to assist comparisons; connect corresponding segments with gray lines.

Compare figures 15.6 and 15.7:

Figure 15.6. World generation of nuclear energy, 1980–1999

Figure 15.7. Largest generators of nuclear energy, 1980–1999

If you group bars because segments are as important as the wholes, do this:

Arrange groups in a logical order; if possible put bars of similar size next to one another (order bars in the same way through all the groups).

Label groups with the number for the whole, either above each group or below the labels on the bottom.

Most data that fit a bar chart can also be shown in a pie chart. Pie charts are popular in magazines, tabloids, and annual reports. While splashy, they are harder to read than bar charts. Readers must compare proportions of segments whose sizes are often hard to judge. But pie charts have their place, especially to communicate qualitative impressions about the comparative size of data, either to show that one segment is disproportionately larger than the rest or that the data is divided into many small segments. Avoid using pie charts to convey quantitative data, however. Use bar charts instead.

15.4.3 Line Graphs

Because a line graph emphasizes trends, readers must see a clear image to interpret it correctly. Do the following:

Choose the variable that makes the line go in the direction, up or down, that supports your point. If the good news is a reduction (down) in high school dropouts, you can more effectively represent the same data as a rising line indicating increase in retention (up). If you want to emphasize bad news, find a way to represent your data as a falling line.

Plot more than six lines on one graph only if you cannot make your point in any other way.

If you have fewer than ten or so data points, indicate them with dots. If only a few are relevant, insert numbers to show their exact value.

Do not depend on different shades of gray to distinguish lines, as in figure 15.8.

Compare figure 15.8 and figure 15.9:

Figure 15.8. Foreign-born residents in the United States, 1870–1990

Figure 15.9. Foreign-born residents in the United States, 1870–1990

Figure 15.8 is harder to read because the shades of gray do not distinguish the lines well against the background and because our eyes have to flick back and forth to connect the lines to the legend. Figure 15.9 makes those connections clearer.

These different ways of showing the same data can be confusing. To cut through that confusion, test different ways of representing the same data. Construct alternative graphics; then ask someone unfamiliar with the data to judge them for impact and clarity. Be sure to introduce the figures with a sentence that states the claim you want the figure to support.

15.5 COMMUNICATING DATA ETHICALLY

Your graphic must be not only clear and accurate, but honest. Do not distort the image of the data to make your point. For example, the two bar charts below display identical data, yet imply different messages:

Figure 15.10. Capitol City pollution index, 1982–1994

The 0–100 scale in the figure on the left creates a fairly flat slope, which makes the drop in pollution seem small. The vertical scale in the figure on the right, however, begins not at 0 but at 80. When a scale is so truncated, it creates a sharper slope that exaggerates small contrasts.

Graphs can also mislead by implying false correlations. Someone might claim that unemployment goes down as union membership goes down and offer figure 15.11 as evidence. And indeed, in that graph, union membership and the unemployment rate do seem to move together so closely that a reader might infer one causes the other:
Figure 15.11. Union membership and unemployment rate, 1993–1999

But the scale for the left axis (union membership) differs from the scale for the right axis (the unemployment rate), making it seem that the two trends could be causally related. They may be, but that distorted image doesn't prove it.

Graphs can also mislead when the image encourages readers to misjudge values. The two charts in figure 15.12 represent exactly the same data but seem to communicate different messages:

Figure 15.12. Representation of suburban counties in state university undergraduates (percent of total)

The charts in figure 15.12 are both stacked area charts. Despite their visual differences, they represent the same data. Area charts such as these represent changes in values not by the *angles* of the lines, but by the areas *between* them. In both charts, the bands for south, east, and west are roughly the same width throughout, indicating little change in the values they represent. The band for the north, however, widens sharply, representing a sharp increase in the numbers it represents. In the chart on the left, readers could easily

misjudge the top three bands, because they are on top of the rising north band, making those bands seem to rise as well. In the chart on the right, on the other hand, those three bands do not rise because they are on the bottom. Now only the band for the north rises.

Here are four guidelines for avoiding visual misrepresentation:

Do not manipulate a scale to magnify or reduce a contrast.

Do not use a figure whose image distorts values.

Do not make a table or figure unnecessarily complex or misleadingly simple.

If the table or figure supports a point, state it.

16 Introductions and Conclusions

> A good introduction encourages readers to read your work with interest and prepares them to understand it better. A good conclusion leaves them with a clear statement of your point and renewed appreciation of its significance. In this chapter, we show you how to write both. The time you spend revising your introduction and conclusion may be the most important revision you do.

Once you think you have a draft that works, you're ready to write your final introduction and conclusion. Some writers think that means following the standard advice: *Grab their attention with something snappy or cute.* That's not useless advice, but readers want more than cute and snappy. In part II, we showed you how to develop a project around a research problem. Here, we show you how to use that problem to engage your readers. What seizes their attention is a problem they think needs a solution, and what holds it is a promise that you've found it. As we've said, you can always work with readers who say, *I don't agree.* What you can't survive are those who shrug and say, *I don't care.*

16.1 THE COMMON STRUCTURE OF INTRODUCTIONS

As we've emphasized, different research communities do things in different ways, but nowhere do those differences seem greater than in their introductions. These three condensed examples are from the fields of cultural criticism, computer design, and legal history. But while they look different on the surface, their underlying structures are identical.

> Why can't a machine be more like a man? In almost every episode of *Star Trek: The Next Generation*, the android Data wonders what makes a person a person. In the original *Star Trek*, similar questions were raised by the half-Vulcan Mr. Spock, whose status as a person was undermined by his machinelike logic and lack of emotion. In fact, Data and Spock are only the most recent "quasi-persons" who have explored the nature of humanity. The same question has been raised by and about creatures ranging from Frankenstein's monster to the Terminator. But the real question is why these characters who struggle to be persons are always white and male. As cultural interpreters, do they tacitly reinforce destructive stereotypes of what it means to be "normal"? The model person seems in fact to be defined by Western criteria that exclude most of the people in the world.

> As part of its program of Continuous Quality Improvement (CQI),

Motodyne Computers plans to redesign the user interface for its Unidyne™ online help system. The specifications for its interface call for self-explanatory icons that let users identify their function without verbal labels. Motodyne has three years' experience with its current icon set, but it has no data showing which icons are self-explanatory. Lacking such data, we cannot determine which icons to redesign. This report provides data for eleven icons, showing that five of them are not self-explanatory.

In today's society, would Major John André, a British spy in civilian clothes captured behind American lines in 1780, be hanged? Though considered a noble patriot, he suffered the punishment mandated by military law. Over time our traditions have changed, but the punishment for spying has not. It is the only offense that mandates death. Recently, however, the Supreme Court has rejected mandatory death sentences in civilian cases, creating an ambiguity in their application to military cases. If Supreme Court decisions apply to the military, will Congress have to revise the Uniform Code of Military Justice? This article concludes that it will.

The topics and problems posed in those three introductions differ as much as their intended readers, but behind them is a shared pattern that readers look for in all introductions, regardless of field. That common structure consists of three elements:
Contextualizing backgrount statement of the problem response to the problem

Not every introduction has all three elements, but most do.

Here is that pattern of *Context* + *Problem* + *Response* in each of those introductions:

CONTEXT: Why can't a machine be more like a man? . . . The same question has been raised by and about creatures ranging from Frankenstein's monster to the Terminator.

PROBLEM: But the real question is . . . do they tacitly reinforce destructive stereotypes of what it means to be "normal"?

RESPONSE: The model person seems in fact to be defined by Western criteria that exclude most of the people in the world.

CONTEXT: As part of its program of Continuous Quality Improvement (CQI), Motodyne Computers plans to redesign the user interface. . . .
Motodyne has three years' experience with its current icon set . . .

PROBLEM: but it has no data showing which icons are self-explanatory.

Lacking such data, we cannot determine which icons to redesign.

RESPONSE: This report provides data for eleven icons, showing that five of them are not self-explanatory.

CONTEXT: In today's society, would Major John André . . . be hanged [for spying]? . . . It is the only offense that mandates death.

PROBLEM: Recently, however, the Supreme Court has rejected mandatory death sentences in civilian cases, creating an ambiguity in their application to military cases. . . . Will Congress have to revise the Uniform Code of Military Justice?

RESPONSE: This article concludes that it will.

Each of those elements plays it own role not only in motivating readers to read your paper, but in helping them understand it.

16.2 STEP 1: ESTABLISHING A CONTEXT

The opening context establishes *common ground*, a shared understanding between reader and writer about the larger issue the writer will address. But it does more, illustrated by the opening of a fairy tale:

Like the opening to most fairy tales, this one establishes an unproblematic, even happy context, just so that it can be disrupted with a problem:

The rest of the story elaborates that problem and then resolves it.

Unlikely though it may seem, most introductions follow the same strategy. They open with the stable context of a common ground—some apparently unproblematic account of research already known. The writer then disrupts it with a problem, saying in effect: *Reader, you may think you know something,* ***but*** *your knowledge is flawed or incomplete.*

STABLE CONTEXT: In today's society, would Major John André, a British spy . . . be hanged? . . . [Spying] is the only offense that mandates death.

DISRUPTING PROBLEM: Recently, **however**, the Supreme Court has rejected mandatory death sentences. . . .

Not every research paper opens with common ground. This one opens directly with a problem:

> Recently the chemical processes that thin the ozone layer have been found to be less well understood than once thought. We may have labeled hydrofluorocarbons as the chief cause incorrectly.

Some readers might find that problem disturbing enough to motivate their reading, but we can heighten its punch by introducing it with the seemingly unproblematic context of prior research, *specifically so that we can disrupt it*:

> As we have investigated environmental threats, our understanding of
>
> chemical processes in acid rain and the buildup of carbon dioxide has
>
> improved, allowing us to understand better their effects on the biosphere.*stable context* [*Sounds good*.] **But recently the processes that thin**
>
> **the ozone layer have been found to be less well understood than once thought.***destabilizing condition* We may have labeled hydrofluorocarbons as the chief cause incorrectly.*consequence*

Readers now have not one reason to see their self-interest in the problem, but two: not just the problem itself, but also their incomplete understanding of the whole matter.

Your context can describe a misunderstanding:

> **The Crusades are widely believed to have been motivated by religious zeal to restore the Holy Land to Christendom.***stable context* **In fact**, the motives were at least partly, if not largely, political.

It can survey flawed research:

> **Few sociological concepts have fallen out of favor as fast as Catholicism's alleged protective influence against suicide. Once one of sociology's basic beliefs, it has been called into question by a series of studies in both Europe and North America**. . . .*stable context* **However**, **certain studies still find an effect of religion . . .**

Or it can point to a misunderstanding about the problem itself:

> **American education has focused on teaching children to think critically, to ask questions and test answers.***stable context* **But** the field of critical thinking has been taken over by fads and special interests.

Some inexperienced researchers skimp on common ground, opening their paper as if they were picking up a class conversation where it left off. Their introductions are so sketchy that only others in the course would understand them:

> In view of Hofstadter's failure to respect the differences among math, music, and art, it is not surprising that the response to *The Embodied Mind* would be stormy. It is less clear what caused the controversy. I will argue that any account of the human mind must be interdisciplinary. . . .

When you draft your introduction, imagine you are writing to someone who has read some of the same sources as you and is generally interested in the same issues, but does not know what specifically happened in your class.

Others make the opposite mistake, thinking they should list every source they read that remotely touches their topic. Survey only those sources whose findings you will *directly* modify. Add more *only* if you need to locate the problem in a wider context.

16.3 STEP 2: STATING YOUR PROBLEM

Once you establish a stable context or common ground, disrupt it with a problem. As we've said, the statement of a research problem has two parts (see chapter 4):

> a *condition* of incomplete knowledge or understanding, and
>
> the *consequences* of that condition, a more significant gap in understanding

You can state the condition directly:

> . . . but Motodyne has no data showing which icons are self-explanatory.

Or you can imply it in an indirect question:

> The real question is why these characters are always white and male.

You make this condition of ignorance or flawed understanding part of a *full* research problem *only* when you imagine someone asking, *So what?*, and then spell out as an

answer the *consequence* of that flawed understanding. You can state that consequence as a direct cost:

> Lacking such data, we cannot determine which icons to redesign.*cost*

Or you can transform the cost into a benefit:

> With such data, we could determine which icons to redesign.*benefit*

The choice between stating a cost and stating a benefit is not just a matter of style. Some research indicates that readers are more motivated by a real cost than by a potential benefit. Our suggestion: state costs or consequences when presenting your problem; state benefits to intensify your solution. That's the straightforward version of stating a problem; there are variations.

16.3.1 When Should You State the Condition of a Problem Explicitly? Occasionally, you tackle a problem so familiar that its name implies both its condition and consequence to those in the field: *the role of DNA in personality*; *Shakespeare's knowledge of foreign languages*. Likewise, in some fields like mathematics and the natural sciences, many research problems are widely known, so just stating the condition is enough to bring to mind its consequence. Here again is that (condensed) introduction to Crick and Watson's landmark account of the double-helix structure of DNA:

> We wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of considerable biological interest. A structure for nucleic acid has already been proposed by Pauling and Corey. They kindly made their manuscript available to us in advance of publication. Their model consists of three intertwined chains, with the phosphates near the fibre axis, and the bases on the outside. In our opinion, this structure is unsatisfactory. . . .

It was enough for them merely to "suggest" a structure for DNA, because they knew everyone wanted to know what it was. (Note, though, that they do raise a problem by mentioning Pauling and Corey's *incorrect* model.)

In the natural sciences and most social sciences, researchers usually address questions familiar to their readers. In that case, you might think you do not need to spell out your problem. But readers won't know the *particular* flaw in their knowledge that your research will correct unless you tell them.

In the humanities and some social sciences, researchers more often pose questions that they alone have found or even invented, questions that readers find new and often surprising. In that case, you must explicitly describe the gap in knowledge or flawed understanding that you intend to resolve.

16.3.2 Should You Spell Out Consequences and Benefits?

To convince readers that they should take your problem seriously, you must state the cost *they* will pay if it is not resolved or the benefits *they* gain if it is. Sometimes you can describe tangible costs that your research helps your readers avoid (see 4.1):

> Last year the River City Supervisors agreed that River City should add the Bayside development to its tax base. Their plan, however, was based on little economic analysis. If the Board votes to annex Bayside without understanding what it will cost the city, **the Board risks worsening River City's already shaky fiscal situation.** When the burden of bringing sewer
>
> and water service up to city code are included in the analysis, the annexation will cost more than the Board assumes.

This is the kind of problem that motivates *applied* research. The area of ignorance (no economic analysis) has tangible consequences (higher costs).

In pure research, you formulate the same kind of problem when you explain the consequence not in money, but as misunderstanding or, alternatively, as the possible benefit of better understanding:

> Since 1972 American cities have annexed upscale neighborhoods to prop up tax bases, often bringing disappointing economic benefits. But those results could have been predicted had they done basic economic analysis. The annexation movement is a case study of how political decisions at the local level fail to use expert information. What is puzzling is why cities do not seek out that expertise. **If we can discover why cities fail to rely on basic economic analyses, we might better**

understand why their decision making fails so often in other areas as well. This paper analyzes the decision-making process of three cities that annexed surrounding areas without consideration of economic consequences.

16.3.3 Testing Conditions and Consequences

In chapter 4 we suggested a way to test how clearly you articulate the consequences of not solving a problem: after the sentences that best state your readers' condition of ignorance or misunderstanding, ask, *So what?*

> Motodyne has no data showing which icons are self-explanatory. [*So what?*] Without such data, it cannot determine which icons to redesign.
>
> Stories about the Alamo in Mexican and U.S. versions differ in obvious ways, but U.S. versions from different eras also differ. [*So what?*] Well . . .

Answering *So what?* can be exasperating, even dismaying. If you fall in love with stories about the Battle of the Alamo, you can pursue them to your heart's content, without having to answer to anyone but yourself: *I just like reading about them.* But for others to appreciate your research, you have to "sell" them on its significance. Otherwise, why should they spend time on it? To convince readers to care about your work, you have to show them that your problem is their problem—even if they don't know it yet. You have to convince them that if they go on not knowing, say, how Hollywood turned the Alamo story into myth, they will fail to understand something more important about national identity. To be sure, some readers will ask again, *So what? I don't care about national identity.* To which you can only shrug and think, *Wrong audience.* Successful researchers know how to find and solve interesting problems, but they also know how to find (or create) an audience interested in the problems they solve.

If you are sure your readers know the consequences of your problem, you might decide not to state them explicitly. Crick and Watson did not specify the cost of not knowing the structure of DNA, because they knew their readers already recognized that without understanding the structure of DNA, they could not understand genetics (something more important). Had Crick and Watson spelled out that consequence, it might have seemed redundant or condescending.

If you are tackling your first research project, no reasonable teacher will expect you to state the consequences of your problem in detail, because you probably don't yet know why other researchers think it is significant. But you take a big step in that direction when you can state your own incomplete knowledge or flawed understanding in a way that shows you are committed to improving it. You take an even bigger step when you can show that by better understanding one thing, you better understand something much more important, even if only to you.

16.4 STEP 3: STATING YOUR RESPONSE

Once you disrupt your readers' stable context with a problem, they expect you to resolve it in one of two ways: by stating your solution or main point or by promising that you will do so later on. Readers look for this statement or promise in the last few sentences of your introduction.

16.4.1 State the Gist of Your Solution

You can state your main point/solution explicitly toward the end of your introduction:

16.4.2 Promise a Solution

Alternatively, you can delay your main point by stating toward the end of your introduction only where your paper is headed, implying that you will present that point in your conclusion. This approach provides a launching point and creates a point-last paper:

> As we have investigated environmental threats, our understanding . . . has improved. . . . But recently the chemical processes . . . have been found to be less well understood. . . . [*So what?*] We may have labeled hydrofluorocarbons as the chief cause incorrectly. [*Well, what* have *you found?*] **In this report we describe a hitherto unexpected chemical** **bonding between** . . . *promise of point to come*

This introduction launches us into the paper, not with its main point but with a promise of one to come.

The weakest promise is one that merely announces a vague topic

> This study investigates processes leading to ozone depletion.

When you save your point for the end of your paper, you ask your readers to trust that getting to it is worth their effort. You build this trust in your introduction by giving them not just a general topic but an outline of your solution or a plan for your argument (or both).

> There are many designs for hydroelectric turbine intakes and diversion screens, but on-site evaluation is not cost-effective. A more viable alternative is computer modeling. **To evaluate hydroelectric diversion screens, this study will evaluate three computer models—Quattro, AVOC, and Turbo-plex—to determine which is most cost-effective in reliability, speed, and ease of use.**

This kind of plan is common in social sciences, but less frequent in the humanities, where many consider it a bit heavy-handed.

16.5 SETTING THE RIGHT PACE

When crafting your introduction, you must decide how quickly to raise your problem. That depends on how much your readers know. In this next example, the writer devotes one sentence to announcing a consensus among well-informed engineers and then briskly disrupts it:

> Fluid-film forces in squeeze-film dampers (SFDs) are usually obtained from the Reynolds equation of classical lubrication theory. **However, the increasing size of rotating machinery requires the inclusion of fluid inertia effects in the design of SFDs. Without them** . . .

(We have no idea what any of that means, but the structure of *Context* + *Problem* is clear.)

This next writer also addresses technical concepts but patiently lays them out for readers who have little technical knowledge:

> A method of protecting migrating fish at hydroelectric power developments is diversion by screening turbine intakes . . . [*another 110 words explaining screens*]. Since the efficiency of screens is determined by the interaction of fish behavior and hydraulic flow, screen design can be evaluated by determining its hydraulic performance . . . [*40 more words explaining hydraulics*]. **This study provides a better understanding of the hydraulic features of this technique, which may guide future designs.**

The pace of an introduction varies by field. Researchers whose problems are already familiar to their research communities can open quickly; those who work in fields where problems are not widely shared must start more slowly. But the pace of your introduction signals something else as well. When you open quickly, you imply an audience of peers; when you open slowly, you imply readers who know less than you. If your readers are knowledgeable and you open slowly, they may think *you* know too little. But if they know little and you open quickly, they may think you are inconsiderate of their needs.

16.6 ORGANIZING THE WHOLE INTRODUCTION

When organizing your introduction, you have many choices, but they are not as complicated as they might seem. They all follow what is in fact a simple "grammar." A full introduction consists of just three elements:

Context + Problem + Response

You don't need all three in every introduction:

If the problem is well known, omit the common ground.

If the consequences of the problem are well known, omit them.

If you want readers to follow your thinking before they know your answer, offer a launching point at the end of your introduction and state your main point in your conclusion.

All this may seem formulaic, but it's what readers expect. And when you master a rhetorical pattern like this, you have more than a formula for writing. You also have a tool for thinking. To write a full statement of your shared context and problem, you have to think hard about what your readers know, what they don't, and, in particular, what they should know and why.

16.7 FINDING YOUR FIRST FEW WORDS

Many writers find the first sentence or two especially difficult to write, and so they fall into clichés.

Don't repeat the language of your assignment. If you are struggling to start, prime your pump by paraphrasing it, but when you revise, rewrite it.

Don't start with a dictionary entry: "*Webster's* defines *ethics* as . . ." If a word is important enough to define, a dictionary definition won't serve.

Don't start grandly: "The most profound philosophers have for centuries wrestled with the important question of . . ." If your subject is grand, it will speak its own importance.

These miscues arise from a good impulse: they are attempts to establish a shared context or common ground with a community of readers. The problem in all cases is that it is the

wrong community. In that first example, the community is too narrow: it is just the student's teacher. In the other examples, the community is too broad: those writers are groping for a context that all of humanity could agree to. To avoid these missteps, open in a way that is likely to appeal to the *specific community of readers* you hope to interest. Here are three standard choices for your first sentence or two.

16.7.1 Open with a Striking Fact Relevant to Your Problem

> Those who think that tax cuts for the rich stimulate the economy should contemplate the fact that the top 1 percent of Americans control one-third of America's total wealth.

16.7.2 Open with a Striking Quotation

Do this only if its words anticipate key terms in the rest of your introduction:

> "From the sheer sensuous beauty of a genuine Jan van Eyck there emanates a **strange fascination** not unlike that which we experience when permitting ourselves to be **hypnotized** by **precious stones**." Edwin Panofsky suggests here something **strangely magical** in Jan van Eyck's works. His images hold a **jewel-like** fascination. . . .

16.7.3 Open with a Relevant Anecdote

Do this only if its language anticipates your topic and vividly illustrates your problem. Here are the opening sentences of an article recounting the rise and fall of a Chicago street gang:

> On a park bench in July 1996, Cynthia, Laurie, and other senior officers of the Black Sisters United (BSU)—Chicago's largest federation of "girl gangs"—reflected on their efforts to sustain an organization that could represent and act on behalf of young African-American women in the city. "We was so close!" Cynthia said with deep anguish, sitting upright and looking about to see if anyone had heard her.

16.8 WRITING YOUR CONCLUSION

Even if your argument doesn't have a section labeled *Conclusion*, it will have a paragraph or two that serve as one. Your conclusion is an occasion to sum up your argument, but just as important, it is an opportunity to extend your research community's conversation by

suggesting new questions your research has allowed you to see. You may be happy to know that you can write your conclusion using the same elements in your introduction, in reverse order.

16.8.1 Start with Your Main Point

State your main point near the beginning of your conclusion. If you already stated it in your introduction, repeat it here but more fully; do not simply repeat it word-for-word.

16.8.2 Add a New Significance or Application

After your point, say why it's significant, preferably with a new answer to *So what?* For example, the writer of this conclusion introduces an additional consequence of the Supreme Court's decision on military death sentences:

> In light of recent Supreme Court decisions rejecting mandatory capital punishment, the mandatory death penalty for treason is apparently unconstitutional and must therefore be revised by Congress. **More significantly, though, if the Uniform Code of Military Justice is changed, it will challenge the fundamental value of military culture that ultimate betrayal requires the ultimate penalty. Congress will then have to deal with the military's sense of what is just.**

This observation belongs in the conclusion rather than in the introduction because it suggests *further questions* the article doesn't take up: *How exactly will the military respond to that challenge to its values? How should Congress respond in turn?* Just as in your introduction you increase the punch of your problem by stating its consequences, so in your conclusion you can increase the significance of your solution by noting its additional implications.

16.8.3 Call for More Research

Just as your opening context surveys research already done, so your conclusion can call for research still to do:

> These differences between novice and expert diagnosticians define their maturation and development. But while we know how novices and experts think differently, **we do not understand which elements in the social experience of novices contribute to that development and how. We need longitudinal studies on how**

mentoring and coaching affect outcomes and whether active explanation and critique help novices become skilled diagnosticians more quickly.

When you state what remains to do, you keep the conversation alive. So before you write your last words, imagine someone fascinated by your work who wants to follow up on it: What more would *you* like to know? What research would you suggest they do? After all, that may have been how you found your own problem.

Quick Tip: Titles

The first thing readers read—and the last thing you should write—is your title. Beginning writers just attach a few words to suggest the topics of their papers. That's a mistake: a title is useful when it helps readers understand *specifically* what is to come. Compare these three titles:

> Microfinance
>
> Microfinance and Economic Development
>
> Microfinance as a Strategy for Economic Development: Realizing Its Potential for Improving the Standing of Women

Put into your title the keywords in your main point, the ones you circled when you checked for the continuity of conceptual themes (6.6.1, 8.2.1,

12.1.1, 12.3.2, 13.4). When readers see those concepts turn up again in your main point and again through the body of your paper, they will feel that your text has met their expectations. (Two-line titles give you more room for key terms. End the first line with a colon that introduces a more specific second line.)

17 Revising Style

Telling Your Story Clearly

> So far we have focused on the argument and organization of your paper. In this chapter, we show you how to revise your sentences so that readers will think they are clear and direct.

Readers will accept your claim only if they understand your argument, but they won't understand your argument if they can't understand your sentences. Once you revise your paper so that readers will judge its argument to be sound and well organized, find time to make a last pass to make your sentences as easy to read as the complexity of your ideas allows. But again, you face a familiar problem: you can't know which sentences need revising just by reading them. Since you already know what you want them to mean, you will read into them what you want your readers to get out of them. To ensure that your sentences will be as clear to your readers as they are to you, you need a way to identify difficult sentences even when they seem fine to you.

17.1 JUDGING STYLE

If you had to read an article in the style of one of the following examples, which would you choose?

> 1a. Conventional management practice assumes that interaction and collaboration enhance organizational performance by improving employee creativity and productivity. But unless collaboration is punctuated by isolation, and unless workspace configurations provide isolation opportunities, erosion rather than enhancement of organizational effectiveness may result.

> 1b. Managers want the people who work for them to interact and collaborate. When they do this, they become more creative and productive. The organization then performs better. But people also need opportunities to work alone, and workplaces need to provide these opportunities. Otherwise, the organization may become less effective.

> 1c. Managers conventionally assume that when employees interact and collaborate, they become more creative and productive, thus leading the whole organization to perform better. But unless employees also have opportunities to work alone, and

unless workspaces are configured to provide them, the organization may become less rather than more effective.

Few readers choose (1a): it sounds dense, abstract, opaque. Some choose (1b), but it sounds simpleminded, like an adult speaking slowly to a child. Most choose (1c), which sounds like one colleague speaking to another. One of the worst problems in academic writing today is that too many researchers sound like (1a).

A few researchers prefer (1a), claiming that heavy thinking demands heavy writing, that when they try to make complicated ideas clear, they sacrifice nuances and complexity of thought for too-easy understanding. If readers don't understand, too bad; they should work harder.

Perhaps. Everyone who reads philosophers like Immanuel Kant or Friedrich Hegel struggles with their complex prose style, at least at first. But what they have to say proves to be worth the effort. The problem is, few of us think as well as Kant or Hegel. For most of us most of the time, our dense writing indicates not the irreducible difficulty of a work of genius, but the sloppy thinking of writers who aren't considering their readers. And even when complex thought does require a complex style (which is less often than we think), every sentence profits from a second look (and truth be told, Kant and Hegel would have benefited from a good editor).

Some writers do go too far in avoiding a complex style, using simplistic sentences like those in (1b) above. But we assume that most of you do not have that problem, and that you need little help with spelling and grammar. (If you think you do, talk to a writing tutor.) We address here the problem of a style that is too "academic," which is to say, more difficult than it has to be. Convoluted and indirect prose is not what good writers aim for, but what thoughtless ones get away with.

This problem especially afflicts those just starting advanced work because they are hit by double trouble. First, when any of us writes about new and complex ideas that challenge our understanding, we write less clearly than we ordinarily can. This problem afflicts even the most experienced researchers. But new researchers compound that problem when they believe that a complex style bespeaks academic success and they imitate the tangled prose they read. That we can avoid.

17.2 THE FIRST TWO PRINCIPLES OF CLEAR WRITING

17.2.1 Distinguishing Impressions from Their Causes

If we asked you to explain how you chose between (1a) and (1c) above, you would probably describe (1a) with words like *unclear*, *wordy*, and *dense*; (1c) with words like *clear*, *concise*, and *direct.* But those words refer not to those sentences on the page, but to how you *felt* as you read them. If you said that (1a) was *dense*, you were really saying that *you* had a hard time getting through it; if you said (1c) was *clear*, you were saying that *you* found it easy to understand.

There's nothing wrong with using impressionistic words to describe your feelings, but they don't help you *fix* unclear sentences like (1a), because they don't explain *what it is on the page or screen that makes you feel as you do.* For that, you need a way to think about sentences that connects an impression like *confusing* to what it is *in the sentence* that confuses you. More important, you have to know how to revise your own sentences when they are clear to you but won't be to your readers.

There are a few principles that distinguish the felt complexity of (1a) from the mature clarity of (1c). These principles focus on only two parts of a sentence: the first six or seven words and the last four or five. Get those words straight, and the rest of the sentence will (usually) take care of itself. To use these principles, though, you must understand five grammatical terms: *simple subject*, *whole subject*, *verb*, *noun*, and *clause*. (If you haven't used those terms for a while, review them before you read on.)

This is important: don't try to apply these principles as you write new sentences. If you follow them *as you draft*, you may tie yourself in knots. Rather, let them guide you when you revise sentences you have already written.

17.2.2 Subjects and Characters

The first principle may remind you of something you learned in grammar school. At the heart of every sentence are its subject and verb. In grammar school you probably learned that subjects are the "doers" or agents of an action. But that's not always true, because subjects can be things other than doers, even actions. Compare these two sentences (the whole subject in each clause is underlined):

2a. Locke frequently repeated himself because he did not trust the power of words to name things accurately.

2b. The reason for Locke's frequent repetition lies in his distrust of the accuracy of the naming power of words.

The two subjects in (2a)—*Locke* and *he*—fit that grammar-school definition: they are doers. But the subject of (2b)—*The reason for Locke's frequent repetition*—does not, because *reason* doesn't really *do* anything here. The real doer is still Locke.

To get beyond sixth-grade definitions, we have to think not only about the grammar of a sentence—its subjects and verbs—but also about the *stories* they tell—about doers and their actions. Here is a story about rain forests and the biosphere:

3a. If rain forests are stripped to serve short-term economic interests, the earth's biosphere may be damaged.

3b. The stripping of rain forests in the service of short-term economic interests could result in damage to the earth's biosphere.

In the clearer version, (3a), look at the whole subjects of each clause:

3a. If rain forests*subject* are stripped*verb* . . . the earth's biosphere*subject* may be damaged.*verb*

Those subjects name the main characters in that story in a few short, concrete words: *rain forests* and *the earth's biosphere*. Compare (3b):

3b. The stripping of rain forests in the service of short-term economic interests*subject* could result*verb* in damage to the earth's biosphere.

In (3b) the simple subject (*stripping*) names not a concrete character but rather an action; it is only part of the long abstract phrase that is the whole subject: *the **stripping** of rain forests in the service of short-term economic interests*.

Now we can see why grammar-school definitions may be bad language theory but good advice about writing. The first principle of clear writing is this:

Readers will judge your sentences to be clear and readable to the degree that you make their subjects name the main characters in your story. When you do this, your subjects will be short, specific, and concrete.

17.2.3 Verbs, Nouns, and Actions

There is a second difference between clear and unclear prose: it is in the way writers express the crucial *actions* in their stories—as verbs or as nouns. For example, look again at the pairs of sentences (2) and (3) below. (Words naming actions are boldfaced; actions that are verbs are underlined; actions that are nouns are double-underlined.)

2a. Locke frequently **repeated** himself because he did not **trust** the power of words to **name** things accurately.

2b. The reason for Locke's frequent **repetition** lies in his **distrust** of the accuracy of the **naming** power of words.

3a. If rain forests are **stripped** to **serve** short-term economic interests, the earth's biosphere may be **damaged**.

3b. The **stripping** of rain forests in the **service** of short-term economic interests could result in **damage** to the earth's biosphere.

Sentences (2a) and (3a) are clearer than (2b) and (3b) because their subjects are characters, but also because their actions are expressed not as nouns but as verbs.

There is a technical term for turning a verb (or adjective) into a noun: we *nominalize* it. (This term defines itself: when we nominalize the verb *nominalize*, we create the nominalization *nominalization*.) Most nominalizations end with suffixes such as *-tion, -ness, -ment, -ence, -ity*.

Verb → Nominalization Adjective → Nominalization

But some are spelled like the verb: *change* → *change*; *delay* → *delay*; *report* → *report*.

(We'll discuss passive verbs like *are stripped* and *be damaged* in 17.4.) When you express actions not with verbs but with abstract nouns, you also

clutter a sentence with articles and prepositions. Look at all the articles and prepositions (boldfaced) in (4b) that (4a) doesn't need:

4a. Having standardized indices for measuring mood disorders, we now can quantify patients' responses to different treatments.

4b. The standardization **of** indices **for the** measurement **of** mood disorders has now made possible **the** quantification **of** patient response **as a** function **of** treatment differences.

Sentence (4b) adds one *a*, *as*, and *for*; two *the*s, and four *of*s, all because four verbs were turned into nouns: *standardize → standardization, measure → measurement, quantify → quantification, respond → response.*

When you turn adjectives and verbs into nouns, you can tangle up your sentences in two more ways:

You have to add verbs that are less specific than the verbs you could have used. In (4b), instead of the specific verbs *standardize*, *measure*, *quantify*, and *respond*, we have the single vague verb *made.*

You are likely to make the characters in your story modifiers of nouns or objects of prepositions or to drop them from a sentence altogether: in (4b), the character *we* becomes *our*, and thereafter the rest of the characters are missing in action.

So here are two principles of a clear style:

• Express crucial actions in verbs.

Make your central characters the subjects of those verbs; keep those subjects short, concrete, and specific.

17.2.4 Diagnosis and Revision

Given how readers judge sentences, we can offer ways to diagnose and revise yours.

To diagnose:

Underline the first six or seven words of every clause, whether main or subordinate.

Perform two tests:

Are the underlined subjects concrete characters, not abstractions?

Do the underlined verbs name specific actions, not general ones like *have*, *make*, *do*, *be*, and so on?

If the sentence fails either test, you should probably revise.

To revise:

Find the characters you want to tell a story about. If you can't, invent them.

Find what those characters are doing. If their actions are in nouns, change them into verbs.

Create clauses with your main characters as subjects and their actions as verbs.

You will probably have to recast your sentence in some version of *If X, then Y*; *X, because Y*; *Although X, Y*; *When X, then Y*; and so on.

That's the simple version of revising dense prose into something clearer.

Here is a more nuanced one.

17.2.5 Who or What Can Be a Character?

You may have wondered why we called *rain forests* and *the earth's biosphere* "characters" when we usually think of characters as flesh-and-blood people. For our purposes, a character is anything that can be the subject of a lot of verbs in a sequence of sentences. This means that we can also tell stories whose characters are things like *rain forests* and even abstractions like *thought disorders*. In your kind of research, you may have to tell a story about *demographic changes*, *social mobility*, *isotherms*, or *gene pools.* Sometimes you have a choice: a paper in economics might tell a story about real or virtual people,

such as *consumers* and the *Federal Reserve Board*, or about abstractions associated with them, such as *savings* and *monetary policy*. Note, however, that you can still make those abstract characters part of a story with action verbs:

> 5a. When consumers **save** more, the Federal Reserve **changes** its monetary policy to influence how banks **lend** money.

> 5b. When consumer **savings** **rise**, Federal Reserve monetary policy **adapts** to **influence** bank **lending** practices.

A passage might be about real people or about abstractions associated with them: *banks* vs. *lending practices*, *savers* vs. *microeconomics*, or *analysts* vs. *predictions.* All things being equal, though, readers prefer characters to be at least concrete things or, better, flesh-and-blood people.

Experts, however, like to tell stories about abstractions (boldfaced; subjects are underlined).

> Standardized indices to measure **mood disorders** help us quantify how patients respond to different **treatments**. These **measurements** suggest that **treatments** requiring long-term **hospitalization** are no more effective than outpatient **care** for most patients.

The abstract nominalizations in the second sentence—*measurements, treatments, hospitalization, care*—refer to concepts as familiar to its intended readers as *doctors* and *patients*. Given those readers, the writer would not need to revise them.

In a way, that example undercuts our advice about avoiding nouns made out of verbs, because now instead of revising every abstract noun into a verb, you have to choose which ones to change and which ones to leave as nouns. For example, the abstract nouns in the second sentence of (6) are the same as the first three in (7a):

> 7a. The **hospitalization** of patients without appropriate **treatment** results in the unreliable **measurement** of outcomes.

But we would improve that sentence if we revised those abstract nouns into verbs:

> 7b. We cannot **measure** outcomes reliably when patients **are hospitalized** but not **treated** appropriately.

So what we offer here is no iron rule of writing, but rather a principle of diagnosis and revision that you must apply judiciously. In general, though, readers prefer sentences whose subjects are short, specific, and concrete. And that usually means flesh-and-blood characters.

17.2.6 Avoiding Excessive Abstraction

You create the worst problems for readers when you make abstract nouns your main character and subjects of your sentences, then sprinkle more abstractions around them. Here is a passage about two abstract characters, *democracy* and *institutionalization.* Nevertheless, the passage is still clear, at least for its intended readers, because its writers focused on their characters in subjects and avoided additional abstractions, especially nominalizations (main characters are italicized; whole subjects are underlined; verbs are boldfaced):

> 8a. We **expect** that older *democracies* **will benefit** from greater *institutionalization* in the political sphere. Although political *institutionalization* **is** difficult to define, there **seems** to be general consensus that procedures in a well-institutionalized polity **are** functionally **differentiated**, **regularized** (and hence predictable), **professionalized** (including meritocratic methods of recruitment and promotion), **rationalized** (explicable, rule based, and non-arbitrary), and **infused** with value. Most long-standing *democracies* **fit** this description.

Note how the story becomes less clear when those main characters are displaced from subjects and when the key abstraction *institutionalization* is surrounded by other abstract nouns (main characters are italicized; whole subjects are underlined; the additional abstractions are boldfaced):

> 8b. Our **expectation** is that greater *institutionalization* in the political sphere will be of **benefit** to older *democracies*. Although **definition** of political *institutionalization* is difficult, there seems to be general consensus that

functional **differentiation**, **regularization** (and hence predictable), **professionalization** (including meritocratic methods of recruitment and promotion), **rationalization** (explicable, rule based, and nonarbitrary), and the **infusion** of value are characteristic of procedures in a well-institutionalized polity. This description is a **fit** for most long-standing *democracies*.

We're not suggesting that you change every abstract noun into a verb. This story about democracy and institutionalization would be difficult to transpose into one about a flesh-and-blood character like *citizens* or *you*. (If you don't believe us, give it a try.) If your best main characters are abstractions, use them. But avoid other abstractions you don't need. As always, the trick is knowing which ones you need and which you don't (usually fewer than you think). Knowing one from the other is a skill that comes only from practice— and criticism.

17.2.7 Creating Main Characters

Having qualified our principle once, we complicate it again. If your sentences are readable, your characters will be the subjects of verbs that express the crucial actions those characters are involved in. But most stories have several characters, any one of whom you can turn into a main character by making it the subject of sentences. Take the sentence about rain forests:

> If rain forests are stripped to serve short-term economic interests, the earth's biosphere may be damaged.

That sentence tells a story that implies other characters but does not specify them: Who is stripping the forests? More important, does it matter? This story could focus on them, but who are they?

> 9a. If developers strip rain forests to serve short-term economic interests, they may damage the earth's biosphere.

> 9b. If loggers strip rain forests to serve short-term economic interests, they may damage the earth's biosphere.

> 9c. If Brazil strips its rain forests to serve short-term economic interests, it may damage the earth's biosphere.

Which is best? It depends on whom you want *your readers to think* the story is about. As you revise sentences, put characters in subjects and actions in verbs, when you can. But be sure that the character is your *central* character, if only for that sentence.

17.3 A THIRD PRINCIPLE: OLD BEFORE NEW

There is a third principle of reading and revising even more important than the first two. Fortunately, all three principles are related. Compare the (a) and

versions in the following. Which seems clearer? Why? (Hint: Look at the beginnings of sentences, this time not just for characters as subjects, but whether those subjects express information that is familiar or information that is new and therefore unexpected.)

> 10a. Because the naming power of words was distrusted by Locke, he repeated himself often. Seventeenth-century theories of language, especially Wilkins's scheme for a universal language involving the creation of countless symbols for countless meanings, had centered on this naming power. A new era in the study of language that focused on the ambiguous relationship between sense and reference begins with Locke's distrust.
>
> 10b. Locke often repeated himself because he distrusted the naming power of words. This naming power had been central to seventeenth-century theories of language, especially Wilkins's scheme for a universal language involving the creation of countless symbols for countless meanings. Locke's distrust begins a new era in the study of language, one that focused on the ambiguous relationship between sense and reference.

Most readers prefer (10b), saying not just that (10a) is *too complex* or *inflated*, but that it's also *disjointed*; it doesn't *flow*—impressionistic words that again describe not what we see on the page but how we *feel* about it.

We can explain what causes those impressions if we again apply the "first six or seven words" test. In the disjointed (a) version, the sentences after the first one begin with information that a reader could not predict:

> the naming power of words
>
> Seventeenth-century theories of language

In contrast, the sentences after the first one in (10b) begin with information that readers would find familiar:

Locke

This naming power [repeated from the previous sentence]

Locke's distrust [a useful abstract noun because it repeats something from the previous sentence]

In (10a) each sentence begins unpredictably, so we can't easily see the "topic" of the whole passage. In (10b) each sentence after the first opens with words referring to ideas that readers recall from the previous sentence.

Readers follow a story most easily if they can begin each sentence with a character or idea that is familiar to them, either because it was already mentioned or because it comes from the context. From this principle of reading, we can infer principles of diagnosis and revision.

To diagnose:

Underline the first six or seven words of every sentence.

Have you underlined words that your readers will find familiar and easy to understand (usually words used before)?

If not, revise.

To revise:

Make the first six or seven words refer to familiar information, usually something you have mentioned before (typically your main characters).

Put at the ends of sentences information that your readers will find unpredictable or complex and therefore harder to understand.

This old-new principle happily cooperates with the ones about characters and subjects, because older information usually names a character (after you introduce it, usually at the *end* of a prior sentence). But should you ever have to choose between beginning a

sentence with a character or with old information, *always choose the principle of old before new.*

17.4 CHOOSING BETWEEN THE ACTIVE AND PASSIVE VOICE

You may have noted that some of the clearer sentences had passive verbs. This seems to contradict familiar advice from English teachers to avoid them. Followed mindlessly, that advice will make your sentences *less* clear. Rather than worry about active and passive, ask a simpler question: Do your sentences begin with familiar information, preferably a main character? If you put familiar characters in your subjects, you will use the active and passive properly.

For example, which of these two passages "flows" more easily?

> 11a. The quality of our air and even the climate of the world depend on healthy rain forests in Asia, Africa, and South America. But the increasing demand for more land for agricultural use and for wood products for construction worldwide now threatens these forests with destruction.
>
> 11b. The quality of our air and even the climate of the world depend on healthy rain forests in Asia, Africa, and South America. But these rain forests are now threatened with destruction by the increasing demand for more land for agricultural use and for wood products used in construction worldwide.

Most readers think (11b) flows more easily. Why? Note that the beginning of the second sentence in (11b) picks up on the character introduced at the end of the first sentence:

> 11b. . . . rain forests in Asia, Africa, and South America. But these rain forests . . .

The second sentence of (11a), on the other hand, opens with information completely unconnected to the first sentence:

> 11a. . . . rain forests in Asia, Africa, and South America. But the increasing demand for more land . . .

In other words, the passive allowed us to move the older, more familiar information from the end of its sentence to its beginning, where it belongs.

And that's the main function of the passive: to build sentences that begin with older information. If we don't use the passive when we should, our sentences won't flow as well as they could.

In English classes, students are told that they should use only active verbs, but they hear the opposite in engineering, the natural sciences, and some social sciences. There teachers demand the passive, thinking that it makes writing more objective. Most of that advice is equally misleading. Compare the passive (12a) with the active (12b):

12a. Eye movements **were measured** at tenth-of-second intervals.

12b. We **measured** eye movements at tenth-of-second intervals.

These sentences offer equally objective information, but their *stories* differ: one is about eye movements, the other about a person measuring them, who happens also to be the author. The first is supposed to be more "objective" because it ignores the person and focuses on the movements. But just avoiding *I* or *we* doesn't make writing more "objective." It simply changes the story.

In fact, the issue of the passive is still more complicated. When a scientist uses the passive to describe a *process*, she implies that the process can be repeated by anyone. In this case, the passive is the right choice, because anyone who wanted to repeat the research would have to measure eye movements.

On the other hand, consider this pair of sentences:

13a. It **can be concluded** that the fluctuations result from the Burnes effect.

13b. We **conclude** that the fluctuations result from the Burnes effect.

The active verb in (13b), *conclude*, and its first-person subject, *we*, are not only common in the sciences, but appropriate. The difference? It has to do with the kind of action the verb names. The active (and therefore first person) is appropriate when authors refer to actions that only the *writer/researcher* can perform—not only rhetorical actions, such as *suggest*, *conclude*, *argue*, or *show*, but also those for which they get credit as scientists, such as *design* experiments, *solve* problems, or *prove* results. Everyone can *measure*, but only author/researchers are entitled to *claim* what their research means. Scientists typically use the first person and active verbs at the beginning of journal articles, where they describe

how *they* discovered their problem and at the end where they describe how *they* solved it. In between, when they describe processes that anyone can perform, they regularly use the passive.

17.5 A FINAL PRINCIPLE: COMPLEXITY LAST

We have focused on how clauses begin. Now we look at how they end. You can anticipate the principle for ending sentences: if familiar information goes first, the newest, most complex information goes last. This principle is particularly important in three contexts:

when you introduce a new technical term

when you present a unit of information that is long and complex

when you introduce a concept that you intend to develop in what follows

17.5.1 Introducing Technical Terms

When you introduce technical terms that are new to your readers, construct your sentences so that those terms appear in the last few words. Compare these two:

> 14a. The monoamine hypothesis has been the leading biological account of depression for over three decades. According to this hypothesis, deficits in monoamines including dopamine, epinephrine, norepinephrine, and serotonin are associated with depression. Monoamine concentrations in neural synapses are regulated in different ways by different types of antidepressants.
>
> 14b. For over three decades, the leading biological account of depression has been the monoamine hypothesis. According to this hypothesis, depression is associated with deficits in neurotransmitters called monoamines, including dopamine, epinephrine, norepinephrine, and serotonin. Different types of antidepressants work in different ways to regulate concentrations of monoamines in neural synapses.

In (14a) all the technical-sounding terms appear early in the sentences; in (14b) the technical terms appear at the end of the sentences.

17.5.2 Introducing Complex Information

Put complex bundles of ideas that require long phrases or clauses at the end of a sentence, never at the beginning. Compare (11a) and (11b) again:

> 11a. The quality of our air and even the climate of the world depend on
>
> healthy rain forests in Asia, Africa, and South America. But the increasing demand for more land for agricultural use and for wood products for construction worldwide now threatens these forests with destruction.
>
> 11b. The quality of our air and even the climate of the world depend on healthy rain forests in Asia, Africa, and South America. But these rain forests are now threatened with destruction by the increasing demand for more land for agricultural use and for wood products used in construction worldwide.

In (11a) the second sentence begins with a long, complex unit of information, a subject that runs on for more than a line. In contrast, the subject of the second sentence in (11b), *these rain forests*, is short, simple, and easy to read, again because the passive verb (*are now threatened*) lets us flip the short and familiar information to the beginning and the long and complex part to the end.

In short, don't begin your sentences with complexity; save it for the end. Unfortunately that's not easy to do, because you may be so familiar with your ideas that you can't distinguish what is *for your readers* old and simple from what's new and complex.

17.5.3 Introducing What Follows

When you start a paragraph, put the key terms that appear in the rest of the paragraph at the end of the first or second sentence. Which of these two sentences would best introduce the rest of the paragraph that follows?

> 15a. The political situation changed, because disputes over succession to the throne plagued seven of the eight reigns of the Romanov line after Peter the Great.
>
> 15b. The political situation changed, because after Peter the Great seven of the eight reigns of the Romanov line were plagued by turmoil over disputed succession to the throne.

> The problems began in 1722, when Peter the Great passed a law of succession that terminated the principle of heredity and required the sovereign to appoint a successor. But because many tsars, including Peter, died before they named successors, those who aspired to rule had no authority by appointment, and so their succession was often disputed by lower-level aristocrats. There was turmoil even when successors were
>
> appointed.

Most readers feel that (15b) is more closely connected to the rest of the passage. The last few words of (15a) seem unimportant in relation to what follows (in another context, of course, they might be crucial).

So once you've checked the first six or seven words in every sentence, check the last five or six as well. If those words are not the most important, complex, or weighty, revise so that they are. Look especially at the ends of sentences that introduce paragraphs or even sections.

17.6 SPIT AND POLISH

We've focused on those issues of sentence style relevant to writing research papers, and on principles of diagnosis and revision that help make prose as readable as possible. There are other principles—sentence length, the right choice of words, concision, and so on. But those are issues pertinent to writing of all kinds and are addressed by many books. And, of course, readability alone is not enough. After you revise your style, you still have to check your grammar, spelling, and punctuation. Then you have to make sure that you have observed the accepted conventions for representing numbers, proper names, foreign words, and so on. Though important, those matters fall outside the purview of this book.

Quick Tip: The Quickest Revision Strategy

Our advice about revision may seem overly detailed, but if you revise in steps, it's not difficult to follow. The first step is the most important: as you draft, remember to forget these steps (except for this one about remembering). Your first job is to draft something to revise. You will never do that if you keep asking yourself whether you should have just used a verb or a noun. If you don't have time to look at every sentence, start with

passages where you found it hard to explain your ideas. When you struggle to write about confusing content, your sentences tend toward confusion as well.

For Clarity and Flow

To diagnose:

Highlight the first six or seven words in every sentence. Ignore short introductory phrases such as *At first*, *For the most part*, and so on.

Run your eye down the page, checking whether you highlighted a consistent set of related words. The words that begin a series of sentences need not be identical, but they should name people or concepts that your readers will see are clearly related. If not, revise.

Check the highlighted words in each sentence. They should include a subject that names a character and a verb that names an important action. If not, revise.

To revise:

Identify your main characters, real or conceptual. Make them the subjects of verbs.

Look for nouns ending in *-tion*, *-ment*, *-ence*, and so on. If they are the subjects of verbs, turn them into verbs.

Make sure that each sentence begins with familiar information, preferably a character you have mentioned before.

For Emphasis

To diagnose:

Underline the last five or six words in every sentence.

You should have underlined

technical-sounding words that you are using for the first time

the newest, most complex information

information that is most emphatic

concepts that the next several sentences will develop

If you do not see that information there, revise: put those words last in the sentence.

PART V

Some Last Considerations

The Ethics of Research

In the last few hundred pages, we've offered a lot of practical advice, but also much preaching about creating social contracts with your readers, projecting an ethos that will encourage their trust, guarding against biases in collecting and reporting evidence, avoiding plagiarism, and so on. Now we want to share with you the underlying ethical issues that shape our advice, hoping that when you close this book, you'll give them more thought.

Everything we've said about research reflects our belief that it is a profoundly *social* activity that connects you both to those who will use your research and to those who might benefit—or suffer—from that use. But it also connects you and your readers to everyone whose research you used and beyond them to everyone whose research they used. To understand our responsibility to those in that network, now and in the future, we have to move beyond mere technique to think about the ethics of civil communication.

We start with two broad conceptions of the word *ethics*: the forging of bonds that create a community and the moral choices we face when we act in that community. The term *ethical* comes from the Greek *ethos*, meaning either a community's shared *customs* or an individual's *character*, good or bad. So far, we have focused on the community-building aspects of research, the bonds we create with our readers and our sources. But as does any social activity, research challenges us to define our individual ethical principles and then to make choices that honor or violate them.

At first glance, a purely academic researcher seems on relatively safe ethical ground—we are less tempted to sacrifice principle for gain than, say, a Wall Street analyst evaluating a stock that her firm wants her to push on investors, or a scientist paid by a drug company to "prove" that a product is safe (regardless of whether it works). No teacher will pay you to write a paper supporting her views, and you probably won't have occasion to fake results to gain fame—like the American researcher who became famous (and powerful) for discovering an HIV virus, when he had in fact "borrowed" it from a laboratory in France.

Even so, you will face such choices from the very beginning of your project. Some are the obvious *Thou shalt not*s for ethical researchers:

> They do not plagiarize or claim credit for the results of others.
>
> They do not misreport sources, invent data, or fake results.
>
> They do not submit data whose accuracy they don't trust, unless they say so.
>
> They do not conceal objections that they cannot rebut.
>
> They do not caricature or distort opposing views.
>
> They do not destroy data or conceal sources important for those who follow.

We apply these principles easily enough to obvious cases: the biologist who used india ink to fake "genetic" marks on his mice, the Enron accountants and their auditors at Arthur Andersen who shredded source documents, the government political advisers who erase e-mails, or the student who submits a paper purchased on the Internet.

More challenging are those occasions when ethical principles take us beyond a simple *Do not* to what we should affirmatively *Do*. When we think about ethical choices in that way, we move beyond simple conflicts between our own self-interest and the honest pursuit of truth, or between what we want for ourselves and what is good for or at least not harmful to others. If reporting research is genuinely a collaborative effort between readers and writers to find the best solution to shared problems, then the challenge is to find ways to create ethical partnerships to make ethical choices (what we traditionally call *character*) that can help build ethical communities.

Such a challenge raises more questions than we can answer here. Some of those questions have answers that we all agree on; others are controversial. The five of us answer some of them differently. But one thing we agree on is that research offers every researcher an ethical invitation that, when not just dutifully accepted but *embraced*, can serve the best interests of both researchers and their readers.

> When you create, however briefly, a community of shared understanding and interest, you set a standard for your work higher than any you could set for yourself alone.

> When you explain to others why your research *should* change their understanding and beliefs, you must examine not only your own understanding and interests, but your responsibility to them if you convince them to change theirs.
>
> When you acknowledge your readers' alternative views, including their
>
> strongest objections and reservations, you move closer not just to more reliable knowledge, better understanding, and sounder beliefs, but to honoring the dignity and human needs of your readers.

In other words, when you do research and report it as a conversation among equals working toward greater knowledge and better understanding, the ethical demands you place on yourself should redound to the benefit of all —even when we cannot all agree on a common good. When you decline that conversation, you risk harming yourself and possibly those who depend on your work.

It is this concern for the integrity of the common work of a community that underscores why researchers condemn plagiarism so strongly. Plagiarism is theft, but of more than words. By not acknowledging a source, the plagiarist steals the modest recognition that honest researchers should receive, the respect that a researcher spends a lifetime struggling to earn. And that weakens the community as a whole, by reducing the value of research to those who follow.

That is true in all research communities, including the undergraduate classroom. The student plagiarist steals not only from his sources, but from his colleagues by making their work seem lesser by comparison to what was bought or stolen. When such intellectual thievery becomes common, the community grows suspicious, then distrustful, then cynical: *Everyone does it. I'll fall behind if I don't.* Teachers must then worry as much about not being tricked as about teaching and learning. What's worse, the plagiarist compromises her own education and so steals from the larger society that devotes its resources to training her and her generation to do reliable work later, work that the community will depend on.

In short, when you report your research ethically, you join a community in a search for some common good. When you respect sources, preserve and acknowledge data that run against your results, assert claims only as strongly as warranted, acknowledge the limits of your certainty, and meet all the other ethical obligations you have as a researcher and

writer, you move beyond gaining a grade or other material goods—you earn the larger benefit that comes from creating a bond with your readers. You discover that research focused on the best interests of others is also in your own.

A Postscript for Teachers

In this postscript we want to make explicit what has been implicit throughout. We hope you will join in an effort to improve the national "research scene." Too many teachers of undergraduates say, *I've given up teaching the research paper.* Colleagues tell us that the ones they get are boring patchworks, that students aren't up to the task, that in any event the dead-tree research paper is a relic of pre-digital days, and even that no one but ivory-tower academics does research anymore.

We think otherwise, of course. We think doing research is the best way to learn to read and think critically. And we know for a fact that the vast majority of our students will have careers in which, if they do not do their own research, they will have to evaluate and depend on the research of others. We also know that most of that research will be in written form, even if it happens to be delivered online. And we can think of no way to prepare for that responsibility better than doing research of one's own.

We wrote this book for those who agree, and believe—or will at least consider—two propositions:

> Students learn to do research well and report it clearly when they take the perspective of their readers and of the community whose values and practices define competent research and its reporting.
>
> They learn to manage an important part of that mental and social process when they understand how a few key formal features of their reports influence how their readers read and judge them.

These two propositions, we believe, are closely related. By understanding the complementary processes of reading and writing, students plan, perform, and report their research better. They can use the features that readers expect to guide themselves through not only the process of drafting, but all the stages of their project. And by understanding what their readers look for in a report, they learn to read the reports of others more critically. The two processes, reading and writing, are mutually supporting.

THE RISKS OF IMPOSING FORMAL RULES

Emphasizing formal features, though, has its risks, especially with new researchers. It is easy to reduce formal structure to empty drill. Those who teach dancers only to hit their marks or pianists only to find the right keys deprive students of the deep pleasures of dance or music. Those who teach research *by the numbers,* as if it were merely learning the proper forms for footnotes and bibliography, deprive students of the pleasures of discovery, students who might otherwise have blessed the world with their own good research.

If students are shown how to approach research in the right spirit, the features of argument become not empty forms but answers to questions that stimulate and reward hard thinking. They help students recognize what is important in the relationship between a researcher, her sources, her disciplinary colleagues and readers. This recognition is a crucial prerequisite to creative and original research.

Forms empty of meaning encourage empty imitation, especially when teachers fail to create in their classrooms a rhetorical context that dramatizes for students their social role as researchers, even if at first only in simulation or role-playing. No textbook can fully create that context, because it requires a class experience that only imaginative teachers can orchestrate.

Only a teacher, understanding his unique students, can devise assignments that create situations whose social dynamic gives point and purpose to research and whose expectations students can recognize and understand. The less experience students have, the more social support teachers must provide before their students can use formal structures in productive ways.

ON ASSIGNMENT SCENARIOS: CREATING A GROUND FOR CURIOSITY

Teachers have found many ways to construct research assignments that give students this necessary support. The most successful have these features:

Good assignments establish outcomes beyond a product to be evaluated. Good teachers ask students to raise a question or problem that at least *they* want to resolve, and to support that resolution with reliable and relevant evidence. Good research assignments

then ask students to translate that private interest into a public one, so that they can experience, or at least imagine, readers who need the understanding that only they can provide.

The best assignments ask students to write for those who actually need to know or understand something better. Those readers might be a transient community of researchers that a problem creates, as when students do their research for a client outside of class. A senior design class, for example, might address a problem of a local company or civic organization; a music class might write program notes; a history class might investigate the origins of some part of their university or an institution in their local community.

Less experienced students might write for their classmates, but they might also write for students in another class who could actually use the information that a beginning researcher could provide. They might do preliminary research for those senior design students or for students in a graduate seminar; or they might even write reports back to students still in high school.

Next best are assignments that simulate such situations, in which students assume that other students or a client or even other researchers have a problem that the student researcher can resolve. Even in large classes, students can work in small groups whose members serve as readers with interests that beginning researchers can reasonably address.

Good assignments help students learn about their readers. Most students have trouble imagining readers whom they have never met and whose situation they have never experienced. Biology students with no knowledge or experience working with a government agency will be unlikely to write a plausible report that meets the concerns of a state EPA administrator. But teachers can help by urging students to imagine those distant readers. Alternatively, they can turn the class into its own audience by letting students decide what problems need solving, what questions need answering. If students can define the problems they're interested in, they will make the best possible readers for one another's research.

Good assignments create scenarios that are rich in contextual information. When students write to solve the problems of readers known and accessible to them, the assignment presents a scenario rich in detail. Students can investigate, interrogate, and analyze the situation for as long as time and ingenuity allow.

But when it's not practical to locate the project in a real context, the assignment should create as much of an imagined context as possible. It's impossible to predict everything students need to know about such a scenario, so it is important to make analysis and discussion of it a part of the writing process. Only when students are working in a social context do they have meaningful choices and good reasons to make them. Only then are those choices rhetorically significant. And only when writers can make rhetorically significant choices will they understand that at the heart of every real writing project is the anticipation of their readers' responses. When students have no choices because their project has no rhetorical "scene" and so is only a mechanical drill, doing research and writing it up become merely make-work —for you as much as for them.

Again we stress the importance of lively discussion among the students, either in class, if the class is small enough, or in subgroups if the class is large.

Good assignments provide interim readers. Few professional researchers call a report finished before they have solicited responses, something students need even more. Encourage students to solicit early responses from colleagues, friends, family, even from you. And build opportunities for response into the assignment itself. Other students can play this role reasonably well, but not if they think that their task is just "editing"—which for them often means rearranging a sentence here and fixing a misspelling there. Have student responders work through some of the steps in chapters 12–17; you can even create teams of responders, each with responsibility for specific features of the text. Those who provide interim responses must participate in the scenario as imagined readers.

As with any real project, good assignments give students time and a schedule of interim deadlines. Research is messy, so it does no good to march students through it lockstep: (1) select topic, (2) state thesis, (3) write outline, (4) collect bibliography, (5) read and take notes, (6) write report. That caricatures real research. But students need some framework, a schedule of tasks that helps them monitor their progress. They need time for false starts and blind alleys, for revision and reconsideration. They need interim deadlines and stages for sharing and criticizing their progress. Those stages can reflect the various sequences outlined in this book.

RECOGNIZING AND TOLERATING THE INEVITABLE MESSINESS OF LEARNING

Students also seriously—sometimes desperately—need other kinds of support, especially recognition of what can be expected of them and tolerance for the predictable missteps of even experienced researchers. Beginners behave in awkward ways, taking suggestions and principles as inflexible rules that they apply mechanically. They work through a topic to a question to their library's online catalog to a few websites, marching on and on to a feeble conclusion, not because they lack imagination or creativity, but because they are struggling to acquire a skill that to them is surpassingly strange. Such awkwardness is an inevitable stage in learning any skill. It passes, but too often only after they have moved on to other classes.

We urge you not to be troubled when a whole class of beginning students produces reports that look alike. We have had to learn to be patient with students, as we wait for the delayed gratification that comes when the learners arrive at genuine originality—knowing it will likely come when we are no longer there to see it.

We try to assure students that even if they do not solve their problem, they succeed if they can pose it in a way that convinces us that it is new—at least to them—and arguably *needs* a solution. Proving that there is a problem to be solved often requires more research and more critical ability than solving it, certainly more than one in which a student can ask a simple question and answer it.

We know that some students use research assignments simply to gather information on a topic, to review a field just to gain control over it. To them, the demand for a significant problem seems artificial. You can only ask them to imagine that they are writing for a reader who is intelligent and possibly interested in their topic but does not have the time to do any research, a reader who is, indeed, in the circumstance they are in.

Finally, different students stand in different relations to the research practices you teach. Advanced students should strive toward the full quality of your own disciplinary practices. But few beginners are yet committed to any research community or to the values that underlie everything in this book. Some will make that commitment early, but most will not. Some never will. In sum, to teach research well, we teachers must adapt the steps we've outlined here to fit the particular circumstances and needs of the individuals before us in class. We can only hope that students at all levels learn these steps, learn to identify them in other writing projects, and then attempt them on their own. Maybe then

they can move toward the kind of sound research and reasoned decision-making that our society so badly needs but too seldom gets.

Method 25-Research Books can Be Used.

1. **Look At The Research Folder**
2. **Decide The Book To Listen, Follow and Apply**
   - **Bernard Research Methods in Anthropology.**
   - **Qualitative Research & Evaluation Methods_ Integrating Theory and Practice.**
   - **Research Methodology - Methods and Techniques.**
   - **Research Methodology in the Medical and Biological Sciences.**
   - **Research Methods in Education.**
   - **Social-Research-Methods.**
   - **The Craft of Research, Fourth Edition (Chicago Guides to Writing, Editing, and Publishing.**
   - **The Oxford Handbook of Qualitative Research.**
   - **The Sage Encyclopedia of Qualitative Research Methods.**
   - **The SAGE Handbook of Qualitative Research.**
   - **The Language of Composition_ Reading, Writing, Rhetoric.**
   - **Patterns for College Writing_ A Rhetorical Reader and Guide.**
   - **How to Write Anything_ A Guide and Reference with Readings with 2009 MLA and 2010 APA Updates.**
3. **Use Intelligently skimming methods.**
   - **Method 1-Systematic Skimming or Pre-reading.**
4. **By skimming you will find the same sources, cited over and over again in the texts as the important go to works.**
5. **Use Rules of reading: Choose one of the methods.**
   - **For Basic Knowledge-Basic Level.**
   - **For Analysis-Intermediate Level.**
   - **Mixed Method-Advanced Level.**
6. **Analysis of Logic.**
7. **Analysis of Grammar.**

8. **Discourse Analysis of The Text**
    A. Use the Following Books for Discourse Analysis:
        - Critical Discourse Analysis_ The Critical Study of Language.
        - Discourse analysis.
        - The Routledge handbook of discourse analysis.
9. **Analysis of Genre.**
    A. Open Figure Of Speech Folder. Use the Following Books for Analysis of Genre :
        - Literary Device.
        - FIGURES OF SPEECH - Biblical Research Journal.
        - Figures of Speech.

10. **Analysis of Context**
    1. What is Immediate Context?
    2. What is the Book Context?
    3. What is the Whole Context?
11. **Facts within The Context.**
12. **Do the Fact Checking. Checking Facts, If they are correct or incorrect.**
    A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
        - Fact Checking Process.
        - Verification Handbook.
        - The Data Journalism.
        - Data Journalism - Centre for Investigative Journalism.
        - Tutorial-computational-fact-checking-a-content-management-perspective.
        - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
        - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
        - The Effect of Fact-checking on Elites.
        - Why do journalists fact-check.
        - Fact-checking 101.
        - Sagan-Baloney.
        - Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:

- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries

- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University

- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

13. Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?
P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?

Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

14. **Checking Each Fact's Sources, If they Are Reliable or Unreliable. Sources the author used**

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Is the Source Reliable or Unreliable?

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.
    34. Eyewitness.

35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website

8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

14. Rhetorical Analysis Of The Text

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:

- Rhetoric By Aristotle.
- A Companion to Rhetoric and Rhetorical Criticism.
- Ancient Rhetoric From Aristotle to Philostratus.
- Ancient Rhetoric For Contemporary Students by Sharon Crowley.
- Art Of Rhetoric By Aristotle.
- Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
- Encyclopaedia of Rhetoric.
- On Rhetoric: Theory of Civic Discourse by Aristotle.
- Politics and Rhetoric: The Persuasive Power of Metaphor.
- Rhetoric By Jennifer Richards.
- Rhetoric In Details By John Benjamins.
- Rhetorical Grammar By Martha Kolln.
- Sourcebook on Rhetoric By James Jasinski.
- The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
- The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
- The Rhetoric of Reason By James Crosswhite.
- Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
- Writing Arguments: a RHETORIC With Reading by John Ramage.

B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

15. Take notes on literature.

16. By reading, you will identify certain questions within the area of research.

17. Master the literature in the area of research.

18. Use Rules of Writing.

Investigative Journalism

Method 26-Investigative Journalism

1. **Open Investigative Journalism Folder. Choose and Use One Of The Following Books From Investigative Journalism Research Book and Follow Every Step:**
   - **How To Read A Book By Mortimer Adler.**
   - **How To Become a Mouthpiece for The People: a Manual For Investigative Journalism.**
   - **Investigative Journalism Handbook.**
   - **Investigative Journalism By Hugo De Burgh.**
   - **Journalism-New_Challenges-Fowler.**
   - **Journalism of Ideas.**
   - **Investigative and Interpretative Journalism.**
   - **Story Based Inquiry: a manual for investigative Journalism.**
   - **The Global Investigative Journalism Casebook.**
   - **The Future OF Computer Assisted Reporting.**
   - **A Watchdog Guide to Investigative Reporting.**
   - **Basic Private Investigation_ A Guide to Business Organization, Management, and Basic Investigative Skills for the Private Investigator.**
   - **What is Investigative Journalism.**
   - **CIMA-Investigative Journalism - Dave Kaplan.**
   - **CIPE_2009_Investigative Reporting Toolkit.**
   - **Citizen Investigation.**
   - **Computer-assisted reporting in Australia_ diffusion of the intern.**
   - **Criminal Investigation for the Professional Investigator (Professional Investigators.**
   - **Digital Investigative Journalism.**
   - **Introduction to Journalism By Richard Rudin.**
   - **Journalism Under Fire.**
   - **The Future of Cross Border Investigative Journalis, By Muckraking.**
   - **Investigative and Interpretative Reporting MAC 214.**
   - **Notes on Investigative Journalism.**
   - **Tell Me No Lies by John Pilger.**
   - **Inquiry Into The Future of Investigative Journalism By Aljeezera.**

- **The Global Casebook: An Anthology for Teacher and Students of Investigative Journalism.**
- **10 Steps To Investigative reporting.**
- **Investigative Reporting In Zambia: Practitioner's Handbook.**
- **Investigative Journalism Techniques.**
- **Research Methods.**

2. **Decide The Book To Listen, Follow and Apply**
3. **Follow Each steps.**
4. **Use Intelligently skimming methods.**
    - **Method 1-Systematic Skimming or Pre-reading.**
5. **By skimming you will find the same sources, cited over and over again in the texts as the important go to works.**
6. **Choose Use Rules of reading Method. Follow each step of the method on every step of the investigative journalism I will be taken.**
    - **For Basic Knowledge-Basic Level.**
    - **For Analysis-Intermediate Level.**
    - **Mixed Method-Advanced Level.**
7. **Step 1. Create a tentative bibliography of your subject by recourse to library catalogues, advisors, and bibliographies in books.**
8. **Step 2. Inspect *all* of the books on the tentative bibliography to ascertain which are germane to your subject, and also to acquire a clearer idea of the subject.Note: These two steps are not, strictly speaking, chronologically distinct; that is, the two steps have an effect on each other, with the second, in particular, serving to modify the first.**
9. **Step 3: Data Journalism and Investigative Journalism and Reporting Toolkit. Open Investigative Journalism Folder. Choose and Use One Of The Following Books From Data Journalism and Investigative Journalism Toolkit and Follow Every Step:**
    - **Model Curricula For Journalism Education.**
    - **Safety for journalism.**
    - **The Journalism Handbook Toward Critical Data Practise.**
    - **Investigative Research Links.**
    - **Bellingcat Digital Toolkit.**
    - **Citizen.**

- **Data JournLISM- cENTRE FOR iNVESTIGATIVE jOURNALISM.**
- **Creating Freelance Career.**
- **Digital Tool.**
- **How To Fund Investigative Journalism.**
- **Freelance to Freedom.**
- **Resource Book On Investigative Journalism.**
- **Freelance Bible.**
- **The Self Publishing Menu.**
- **The Data jOURNALISM hANDBOOK.**

10. **Step 4: Analyse Accounts And The Resources I have Gathered. Open Investigative Journalism Folder. Choose and Use One Of The Following Books From Analyse Business, Accounting Book and Follow Every Step:**
    - **Accounting All-in-One For Dummies.**
    - **Accounting For Dummies.**
    - **Bookkeeping and Accounting All-in-One For Dummies.**
    - **Business Math For Dummies (For Dummies (Business & Personal Finance.**
    - **Business Start Up For Dummies Three e-book Bundle_ Starting a Business For Dummies, Business Plans For Dummies, Understanding Business Accounting.**
    - **Cash Flow.**
    - **Complete MBA.**
    - **Financial Accounting For Dummies.**
    - **Financial Investigation and Forensic Accounting, Third Edition.**
    - **CFA 1-3 Levels.**
    - **Accounting ACCA F 1-9 AND P1-7.**
    - **Follow Money.**
    - **Forensic and Investigative Accounting.**
    - **Forensic Science_ Fundamentals and Investigations.**
    - **Fundamental Analysis For Dummies.**
    - **How to Read A Financial Report (Wringing Vital Signs Out Of The Numbers).**
    - **How to Read a Financial Report_ Wringing Vital Signs Out of the Numbers.**
    - **Managerial Accounting For Dummies.**
    - **Money Laundering _ A Guide for Criminal Investigators.**
    - **Reading financial reports for dummies.**
    - **The Personal MBA_ Master the Art of Business.**
    - **Training Manual-Reporting on Corruption Investigative Journalism.**

11. **Step 5: Analyse Resources I have Gathered. Open Investigative Journalism Folder. Choose and Use One Of The Following Books From Other Books and Follow Every Step**
    - **Who is Running The Company.**
    - **Corporate Governance.**
    - **How to Analyze People at First Sight.**
    - **How to Avoid Being Killed in a War Zone_ The Essential Survival Guide for Dangerous Places.**
    - **Information Security for Journalism.**
    - **investigating local govt.**
    - **Investigating,Companies,A,DIY,Handbook,University,of,Liverpool.**
    - **Learn to Earn_ A Beginner's Guide to the Basics of Investing and Business.**
    - **Predictive analytics for dummies.**
    - **Spy the Lie_ Former CIA Officers Teach You How to Detect Deception.**
    - **Verification Handbook.**

12. **STEP 12 IN SYNTOPICAL READING: FINDING THE RELEVANT PASSAGES. Since we are of course assuming that you know how to read analytically, we are assuming that you could read each of the relevant books thoroughly if you wanted to. But that would be to place the individual books first in the order of your priorities, and your problem second. In fact, the order is reversed. *In syntopical reading, it is you and your concerns that are primarily to be served, not the books that you read. First,* the topic in connection with which the passage is being read serves to give direction to the reader in interpreting the passage. But it does not tell him what the passage means, since the passage may be relevant to the topic in several or many different ways. Hence the reader is called upon to *discover precisely what relevance the passage has to the topic.* To learn to do this is to acquire a major skill in the art of reading.**

13. **STEP 13 Use Rules of Reading by Analysing the various text. IN SYNTOPICAL READING: BRINGING THE AUTHORS TO TERMS. In interpretive reading (the second stage of analytical reading) the first rule requires you to come to terms with the author, which means identifying his key words and discovering how he uses them. But now you are faced with a number of different authors, and it is unlikely that they will have all used the same words, or even the same terms. *Thus it is you who must establish the terms, and bring your authors to them rather than the other way around. First* the collection of a number of passages on the same topic, but from different works and different authors, serves to *sharpen the reader's interpretation of each passage read.* Sometimes, when passages from the same book are read in sequence and in the context of one another, each becomes clearer. Sometimes the meaning of each of a series of contrasting or conflicting passages from different books is accentuated when they are read against one another. And sometimes the passages from one author, by amplifying or commenting on the passages from another, materially help the reader's understanding of the second author.*Second* if syntopical reading is done on a number of different subjects, the fact that the same passage will often be found cited in the Syntopicon under two or more subjects will have its instructive effect. The passage has an amplitude of meaning that the reader will come to perceive as he interprets it somewhat differently in relation to different topics. Such multiple interpretation not only is a basic exercise in the art of reading but also tends to make the mind habitually alert to the many strains of meaning that any rich or complex passage can contain. This is probably the most difficult step in syntopical reading. What it really comes down to is forcing an author *to use your language, rather than using his.* All of our normal reading habits are opposed to this. As we have pointed out several times, we assume that the author of a book we want to read analytically is our better, and this is particularly true if the book is a great one. Our tendency is to accept the author's terms and his organization of the subject matter, no matter how active we may be in trying to understand him. In syntopical reading, however, we will very quickly be lost if we accept any one author's terminology. We may understand *his* book, but we will fail to understand the others, and we will find that not much light is shed on the subject in which we are interested. Not only must we resolutely refuse to accept the terminology of *any one* author; we must also be willing to face the possibility that *no* author's terminology will be useful to us. In other words, we must accept the fact that coincidence of terminology between us and any of the authors on our list is merely accidental. Often, indeed, such coincidence will be inconvenient; for if we use one term or set of terms of an author, we may be tempted to use others among his terms, and these may get in the way rather than help. Syntopical reading, in short, is to a large extent an exercise in translation. We do not have to translate from one natural language to another, as from French to English. But we do impose a common terminology on a number of authors who, whatever natural language they may have shared in common, may not have been specifically concerned with the problem we are trying to solve, and therefore may not have created the**

ideal terminology for dealing with it. This means that as we proceed on our project of syntopical reading we must begin to build up a set of terms that first, helps us to understand all of our authors, not just one or a few of them, and second, helps us to solve our problem. That insight leads to the third step.

14. **STEP 14 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: GETTING THE QUESTIONS CLEAR. The second rule of interpretive reading requires us to find the author's key sentences, and from them to develop an understanding of his propositions. Propositions are made up of terms, and of course we must do a similar job on the works we are reading syntopically. But since we ourselves are establishing the terminology in this case, *we are faced with the task of establishing a set of neutral propositions as well.* The best way to do this is to frame a set of questions that shed light on our problem, and to which each of our authors gives answers. This, too, is difficult. The questions must be stated in such a way and in such an order that they help us to solve the problem we started with, but they also must be framed in such a way that all or most of our authors can be interpreted as giving answers to them. The difficulty is that the questions we want answered may not have been seen as questions by the authors. Their view of the subject may have been quite different from ours. Sometimes, indeed, we have to accept the fact that an author gives *no* answer to one or more of our questions. In that case, we must record him as silent or indeterminate on the question. But even if he does not discuss the question explicitly, we can sometimes find an implicit answer in his book. *If* he had considered the question, we may conclude, he would *then* have answered it in such and such a way. Restraint is necessary here; we cannot put thoughts into our authors' minds, or words into their mouths. But we also cannot depend entirely on their explicit statements about the problem. If we could depend on any one of them in that way, we probably would have no problem to solve. We have said that the questions must be put in an order that is helpful to us in our investigation. The order depends on the subject, of course, but some general directions can be suggested. The first questions usually have to do with *the existence or character of the phenomenon or idea we are investigating.* If an author says that the phenomenon exists or that the idea has a certain character, then we may ask further questions of his book. These may have to do with *how the phenomenon is known or how the idea manifests itself.* A final set of questions might have to do with *the consequences of the answers to the previous questions.* We should not expect that all of our authors will answer our questions in the same way. If they did, we would once again have no problem to solve; it would have been solved by consensus. Since the authors will differ, we are faced with having to take the next step in syntopical reading.**

15. **STEP 15 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: DEFINING THE ISSUES. If a question is clear, and if we can be reasonably certain that authors answer it in different ways— perhaps pro and con—then an issue has been defined. It is the issue between the authors who answer the question in one way, and those who answer it in one or another opposing way.**
16. **STEP 16 Use One of Rules of Reading Methods For Full Analysis of Texts.**
17. **STEP 17 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Context Of Author's text.**
    1. What is Immediate Context?
    2. What is the Book Context?

18. **STEP 18 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. What are The Facts Within Context of an Author.**
19. **STEP 19 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Grammar Of Texts.**
20. **STEP 20 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Logic Of Texts.**
21. **Step 21- Discourse Analysis of The Text**
    A. Use the Following Books for Discourse Analysis:
        - Critical Discourse Analysis_ The Critical Study of Language.
        - Discourse analysis.
        - The Routledge handbook of discourse analysis.

22. **Step 22- Facts within The Context.**

23. Step 23- Do the Fact Checking. Checking Facts, If they are correct or incorrect.

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.

- Fact Checking Process.
- Verification Handbook.
- The Data Journalism.
- Data Journalism - Centre for Investigative Journalism.
- Tutorial-computational-fact-checking-a-content-management-perspective.
- Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
- Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
- The Effect of Fact-checking on Elites.
- Why do journalists fact-check.
- Fact-checking 101.
- Sagan-Baloney.
- Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:

- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries

- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University

- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

24. Step 24 Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?
P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?

Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

25. **Step 25. Checking Each Fact's Sources, If they Are Reliable or Unreliable. Sources the author used**

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Is the Source Reliable or Unreliable?

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.

34. Eyewitness.
35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website

8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

26. STEP 26 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. Analysis of Rhetoric Of Texts.

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:

- Rhetoric By Aristotle.
- A Companion to Rhetoric and Rhetorical Criticism.
- Ancient Rhetoric From Aristotle to Philostratus.
- Ancient Rhetoric For Contemporary Students by Sharon Crowley.
- Art Of Rhetoric By Aristotle.
- Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
- Encyclopaedia of Rhetoric.
- On Rhetoric: Theory of Civic Discourse by Aristotle.
- Politics and Rhetoric: The Persuasive Power of Metaphor.
- Rhetoric By Jennifer Richards.
- Rhetoric In Details By John Benjamins.
- Rhetorical Grammar By Martha Kolln.
- Sourcebook on Rhetoric By James Jasinski.
- The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
- The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
- The Rhetoric of Reason By James Crosswhite.
- Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
- Writing Arguments: a RHETORIC With Reading by John Ramage.

B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

C. When only two answers are given by all of the authors examined, the issue is a relatively simple one. Often, more than two alternative answers are given to a question. In that case, the opposing answers must be ordered in relation to one another, and the authors who adopt them classified according to their views. An issue is truly joined when two authors who understand a question in the same way answer it in contrary or contradictory ways. But this does not happen as often as one might wish. Usually, differences in answers must be ascribed to *different conceptions of the question* as often as to *different views of the subject.* The task of the syntopical reader is to define the issues in such a way as to

insure that they are joined as well as may be. Sometimes this forces him to frame the question in a way that is not explicitly employed by any author. There may be many issues involved in the discussion of the problem we are dealing with, but it is likely that they will fall into groups. Questions about the character of the idea under consideration, for example, may generate a number of issues that are connected. A number of issues revolving around a closely connected set of questions may be termed the *controversy* about that aspect of the subject. Such a controversy may be very complicated, and it is the task of the syntopical reader to sort it out and arrange it in an orderly and perspicuous fashion, even if no author has managed to do that. This sorting and arranging of the controversies, as well as of the constituent issues, brings us to the final step in syntopical reading.

27. **STEP 27 Use Rules of Reading by reading the various text. IN SYNTOPICAL READING: ANALYSING THE DISCUSSION. So far we have found the relevant passages in the works examined, created a neutral terminology that applies to all or most of the authors examined, framed and ordered a set of questions that most of them can be interpreted as answering, and defined and arranged the issues produced by differing answers to the questions. What then remains to be done? The first four steps correspond to the first two groups of rules for analytical reading. Those rules, when followed and applied to any book, allowed us to answer the questions, What does it say? and How does it say it? In our syntopical reading project, we are similarly able at this point to answer the same questions about the discussion concerning our problem. In the case of the analytical reading of a single work, two further questions remained to be answered, namely, Is it true? and What of it? In the case of syntopical reading, we are now prepared to address ourselves to similar questions about the discussion. Let us assume that the problem with which we began was not a simple one, but was rather one of those perennial problems with which thinkers have struggled for centuries, and about which good men have disagreed and can continue to disagree. We should recognize, on this assumption, that our task as syntopical readers is not merely to answer the questions ourselves—the questions that we have so carefully framed and ordered both to elucidate the discussion of the subject and the subject itself. The truth about a problem of this sort is not found so easily. In fact, we would probably be presumptuous to expect that the truth could be found in any one set of answers to the questions. Rather, it is to be found, if at all, in *the conflict of opposing answers,* many if not all of which may have persuasive evidence and convincing reasons to support them. The truth, then, insofar as it can be found—the solution to the problem, insofar as that is available to us—consists rather in the *ordered discussion itself* than in any set of propositions or assertions about it. Thus, in order to present**

this truth to our minds—and to the minds of others—we have to do more than merely ask and answer the questions. We have to ask them in a certain order, and be able to defend that order; we must show how the questions are answered differently and try to say why; and we must be able to point to the texts in the books examined that support our classification of answers. Only when we have done all of this can we claim to have analysed the discussion of our problem. And only then can we claim to have understood it. We may, indeed, have done more than that. A thorough analysis of the discussion of a problem may provide the groundwork for further productive work on the problem by others. It can clear away the deadwood and prepare the way for an original thinker to make a breakthrough. Without the work of analysis, that might not have been possible, for the dimensions of the problem might not have been visible.

28. **Take notes on literature.**
29. **By reading, you will identify certain questions within the area of research.**
30. **Master the literature in the area of research.**
31. **Use Rules of Writing.**

Mixed Method

Method 27-Mixed Methods of Rules of Reading

1. **Decide, What Rules of Reading Method I Will Use For Following:**
    I. **Reading.**
    II. **Deep Work.**
    III. **Listening.**
    IV. **Analysis.**
    V. **Thinking.**
    VI. **Learning.**
    VII. **Study.**
    VIII. **Investigative Journalist.**
    IX. **Syntopicon.**
    X. **Research.**
    XI. **Asking Questions.**
    XII. **Doing.**

2. **Choose One of the Method of Rules of Reading For Following:.**
    A. **Skimming:**
        I. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

    B. **Entertainment**
        I. **Method 1-Speed Reading. Pages 58-63.**

    C. **Methods for Basic Knowledge For Deep Work or Bible Study.**
        I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**
        III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
        V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        VI. **Method 6-Devotional Bible Read. Pages 72-73.**

    D. **Bible Study.**
        I. **Method 1-Chapter Summary Method of Bible Study. Pages 141-145.**
        II. **Method 2-Character Quality Method of Bible Study. Pages 146-158.**
        III. **Method 3-Thematic Method of Bible Study. Pages 159-161.**
        IV. **Method 4-Biographical Method of Bible Study. Pages 162-174.**
        V. **Method 5-Topical Method of Bible Study. Pages 175-178.**
        VI. **Method 6-Word Study Method of Bible Study. Pages 179-187.**
        VII. **Method 7-Book Background Method of Bible Study. Pages 188-192.**
        VIII. **Method 8-Book Survey Method of Bible Study. Pages 193-203.**
        IX. **Method 9-Chapter Analysis Method of Bible Study. Pages 204-213.**
        X. **Method 10-Paragraph Study. Pages 214-227.**
        XI. **Method 11-Verse by Verse Analysis Method. Pages 228-232.**
        XII. **Method 12-Book Synthesis Method of Bible. Pages 233-236.**
        XIII. **Method 13-Theological Study Method of Bible Study. Pages 237-243.**
        XIV. **Method 14-Studying Bible Prophecy. Pages 244-257.**
        XV. **Method 15-Typological Study Method. Pages 258-260.**
        XVI. **Method 16- John MacArthur Way Bible Study. Pages 261-266.**

XVII. Method 17-Inductive Bible Study Method. Pages 267-294.

XVIII. Method 18-BIBLICAL HERMENEUTICS. Pages 295-300.

XIX. Method 19-Theological Group of Principles. Pages 301-304.

XX. Method 20- How To Read A Book Pages 305.

E. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.

I. Method 21- How To Read A Book By Mortimer Adler Various edition Pages 338.

II. Method 22-How To Read A Book For Various Books. Pages 339-597.

III. Method 23- Syntopicon Pages 598-639.

IV. Method 24-The Craft of Research. Pages 640-879.

V. Method 25-Research Books can Be Used. Pages 880-895.

VI. Method 26-Investigative Journalism. Pages 896-922.

VII. Method 27-Mixed Methods of Rules of Reading. Pages 923-941.

3. Analysis of Logic.

4. Analysis of Grammar.

5. Discourse Analysis of The Text

A. Use the Following Books for Discourse Analysis:

- Critical Discourse Analysis_ The Critical Study of Language.
- Discourse analysis.
- The Routledge handbook of discourse analysis.

6. Analysis of Genre.

A. Open Figure Of Speech Folder. Use the Following Books for Analysis of Genre :

- Literary Device.
- FIGURES OF SPEECH - Biblical Research Journal.
- Figures of Speech.

7. Analysis of Context

1. What is Immediate Context?
2. What is the Book Context?
3. What is the Whole Context?

11. Facts within The Context.

12. Do the Fact Checking. Checking Facts, If they are correct or incorrect.

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.

- Fact Checking Process.
- Verification Handbook.
- The Data Journalism.
- Data Journalism - Centre for Investigative Journalism.
- Tutorial-computational-fact-checking-a-content-management-perspective.
- Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
- Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
- The Effect of Fact-checking on Elites.
- Why do journalists fact-check.
- Fact-checking 101.
- Sagan-Baloney.
- Fact Checking.

B. Research the Facts, figures and ideas and do fact checking, if these are true or false through:

- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University
- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries

- Bubl Link
- Look at all academic search engine and journals and books published by academics
- Expository or ordinary Bible commentaries-have between 1-50 commentaries on the text you study
- Treasure of scripture knowledge
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Doctrinal issues
- Books on custom
- Books on Culture
- Books on economy
- Books on political
- Books on geography
- Books on social
- Books on reconstructing the time
- Concordance
- Biblical greek dictionary
- Biblical Hebrew Dictionary
- Biblical Greek text
- Biblical Hebrew text
- Biblical Hebrew Grammar-Beginners to Advanced
- Biblical Greek Grammar-Beginners to Advanced
- Life and time of Jesus the Messiah
- Biography and History on Life and time of Paul, Peter, John, Luke, Matthew, Mark and other apostles
- Topical Study
- Wikipedia
- E-book
- Books about autobiography and Biography
- Websites
- University

- Books
- Audiobooks
- Handbooks
- Dictionary
- Cross References
- Atlas
- Commentaries
- Articles
- Journals
- Newspapers
- Websites
- Harvard business review
- Google professor manual
- Lensman Solvay
- Brussels
- My Athens
- Academic works and index
- Academic information
- Iseek education
- Virtual LRC
- Refseek
- Google scholar
- Microsoft academic search
- Trade journals
- Encyclopedia
- Wiki
- Handbooks
- Diaries
- Bubl Link
- Look at all academic search engine and journals and books published by academics.

C. Do full fact checking of the facts the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

D. Do full fact checking of the figures the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

E. Do full fact checking of the statistics the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

F. Do full fact checking of the formulas the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

G. Do full fact checking of the mathematical results the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

H. Do full fact checking of the evidences the author provided.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

I. Any other information author provided do full fact checking.
    - Are The Facts Provided are Trustworthy?
    - Are the FACTS are True or Wrong?
    - Has the Author Did a Full Fact Checks on either side?

Do Checking The Sources of Each Fact Provided

A. Use The Following Books To Do the Fact Checking

B. Does the Author provided the list of sources citation?

13. Bias vs Unbiased

A. Listen and read if the author is biased or unbiased.
B. Is the author best representative for one or another side?
C. Is the author bias or not? What is the author's bias and purpose?
D. Does the speaker or writer have personal or professional interest in the information they are presenting?
E. How a writer might purposely present ideas or events in ways that favour a particular political party/organisation/religion/social group?
F. Does the author presents facts and explain the ideas to reader or listener?
G. Is the author uses facts and opinions to argue for or against some idea?
H. Is the author tries to amuse or interest the reader with humour, suspense, intense and stories?
I. Look at the language in the passage?
    - If it is neutral and objective, the purpose is probably simply to inform the reader?
    - If is includes terms and are strongly positive, negative or emotional, the purpose is probably to persuade the reader?
    - It is include situations or descriptions that are funny, surprising or intriguing the writer, probably wants to entertain the reader?
J. Is the author biased?
    - Is the author presenting only one side of an argument?
    - Is it include only facts and examples that support writer's opinion?
    - Is it using the language intended to influence the reader's emotions?
    - Is it ridicules other opinions or views?
K. Does the author have contradictory information, cherry picked evidence or carefully select language in which to present information favourably?
L. Is the author or speaker speaks/writes for company, special interest group, an institute foundation think tank or political party?
M. Does the author/writer gets paid or provided any gift for endorsement or opinion?
N. Does the person have interest on this topic or has any personal gain? If not then this writer/speaker is disinterested, impartial/unbiased objective.
O. If the speaker/writer has interest, then why does she/he present the information/ data in such a way?
P. In surveys or studies has the author worded the question in such a way to ensure the sought-after response?

Q. Is the company paid the author to proof that the devise or product is better than any other product in the market?
R. Is the the marker or industry try to defend the product? Did the author put the best spin on its information?
S. When was the survey or studies or experiment done?
T. What day were the tests, survey or experiment done?
U. Purpose of the author writing?
V. How did the author handle opposing view?is the author trying to persuade the reader to some belief?
W. Does the author fairly handle the opposing view? Or did the author dismiss opposing points without regard to their possible value?
X. Does the writer made any straw man fallacy, misrepresenting opposing view to more easily now them down?
Y. Did the author used slanted language or commit personal attack?
Z. Does the writer sweeping generalisation or demonstrate an either/or approach to complicated issues, thereby revealing a strong bit toward one side?
AA. Does the writer pretend to be objective?
BB. Does the writer intends to be ironic or satirical, if she or he is clearly exaggerating for effect?
CC. Does the writer admits to guesswork and speculation?

14. **Checking Each Fact's Sources, If they Are Reliable or Unreliable. Sources the author used**

A. Open Fact Checking Folder. Use The Following Books to Do The Fact Checking.
   - Fact Checking Process.
   - Verification Handbook.
   - The Data Journalism.
   - Data Journalism - Centre for Investigative Journalism.
   - Tutorial-computational-fact-checking-a-content-management-perspective.
   - Nato_stratcom_coe_fact-checking_and_debunking_02-02-2021-1.
   - Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics.
   - The Effect of Fact-checking on Elites.
   - Why do journalists fact-check.
   - Fact-checking 101.
   - Sagan-Baloney.
   - Fact Checking.

B. Listen or read what sources of information Author used

C. What are the author's sources?
   - Did the writer respond to those who have preceded them?
   - Has the writer depended on the primary/secondary/tertiary sources?
   - Has the writer misquoted the primary/secondary/tertiary or has he quoted the primary/secondary/tertiary source?
   - Has the writer uses statistics or data, has he used primary/secondary/tertiary source?
   - Has the writer interpreted the data or survey or statistics biased/unbiased?
   - Has the author correctly interpreted the information?
   - Has the author incorrectly interpreted information?
   - Search the very sources author uses and see if the author interpreted the information in correct way.
   - Has the author uses trust sources for the work he has written?

D. Is the Source Reliable or Unreliable?

E. Sources

- Is the author uses primary source in presenting some data or facts in his/her newspaper, article, book journal?
    1. Is the primary source reliable, fair, ethical and trustworthy?
    2. Is the primary source sloppy, biased, unethical?
    3. Is the primary source objective when they speaking about certain subject?
    4. Are the primary source present facts carefully or careless?
    5. Is the primary source truthfully presenting the facts, opinions and data?
    6. Who is the writer? Is he /she qualified expert to write about this topic?
    7. Did the write done proper research regarding the topic?
    8. What is the tone?
    9. What is the purpose of publication?
    10. What assumption does the author make?
    11. What are the bases of author's conclusions?
    12. Does the author agree or disagree with other authors on the subject?
    13. Was this written in regards of the counterargument other authors who have opposite views?
    14. Does the content agree or disagree with author/authors on the subject?
    15. Does the content agree or disagree with what you know or have learned about the issue?
    16. Where was the source made?
    17. Where is the material from? Is this a valid source of information?

F. Is the Source Reliable or Unreliable?

- What primary sources did the author use. This is the list of primary source:
    1. Data and original research.
    2. Diaries and journals.
    3. Letters and memos.
    4. Autobiographies and memoirs.
    5. Books or articles written at the time of event?
    6. Government documents.
    7. Census statistics.
    8. Organisational records.
    9. Documentaries.
    10. photographs, art (from the time period).
    11. Maps (from the period).
    12. Patents.
    13. Theses.
    14. Dissertations.
    15. Photographs.
    16. Journal articles.
    17. Newspaper articles.
    18. Survey research research.
    19. Meetings.
    20. Symposia.
    21. Original documents.
    22. Records of organisation.
    23. Internet.
    24. Email.
    25. Communication in listservs.
    26. Interviews.
    27. Video recordings.
    28. Audio recordings.
    29. Websites.
    30. Communication through social media.
    31. Artefacts.
    32. Reports.
    33. Works of art and architecture.
    34. Eyewitness.

35. Statistics.
36. Oral history.
37. Description of travel.
38. Cartoon.
39. Postcards.
40. Posters.
41. Internet communications.
42. Any above reprinted in the original formal and language.

- Is the author use secondary source in presenting some data or facts in his/her newspaper, articles, book, magazine/, journal?
    1. Is the second hand source reliable, fair ethical and trustworthy?
    2. Is the second hand source being sloppy, biased, unethical in their quoting paraphrasing and summarising?
    3. Is the secondary source objectively when they are speaking about certain subject?
    4. Are the secondary source present facts carefully or careless?
    5. Is the secondary source truthfully presents the facts opinions/data?
    6. Is the secondary data was accepted blind faith or skeptically analysed by author?
    7. What secondary source did the author use? This is the list of secondary sources:
        - Encyclopedia
        - Chronologies
        - Biographies
        - Monographs
        - Most journal article
        - Literary criticism
        - Political analysis
        - Review of law and legislations
        - Essay on morals and ethics
        - Analyses of social policy
        - Study and teaching material
        - Literature reviews
        - Research articles
        - Criticism of works of literature, art and music
        - Most published books
        - Abstract of articles
        - Paraphrased quotation
        - Dictionaries
        - Textbooks
        - Commentaries
        - Magazines and newspaper articles
        - Website

8. Is the Source Reliable or Unreliable?

- Is the author use tertiary source in presenting some data or facts in her newspaper, articles, book journal or magazine
    1. Is the tertiary hand source reliable, fair, ethical and trustworthy?
    2. Is the tertiary hand source being sloppy, biased, unethical in their quoting, paraphrasing and summarising.
    3. Is the tertiary source objectively when they are speaking about certain subject?
    4. Are the tertiary source present facts carefully or careless?
    5. Is the tertiary source truthfully presents the facts opinions/data?
    6. Is the tertiary data was accepted blind faith or skeptically analysed by author?
    7. What tertiary source did the author use? List:
        - Almanacs
        - Bibliographies
        - Classification
        - Population registers
        - Chronologies
        - Dictionaries
        - Encyclopedias
        - Directories
        - Fact books
        - Guidebooks
        - Indexes
        - Abstract sources
        - Manuals textbooks
        - Handbooks
        - Wikipedia
        - Concordance
        - Field guides
        - Timelines
        - Surveys
        - Overview articles
        - Directories
    8. Is the Source Reliable or Unreliable?

14. Rhetorical Analysis Of The Text

A. Open Rhetorical Analysis Folder. Use The Following Books For Rhetorical Analysis of The Book:

- Rhetoric By Aristotle.
- A Companion to Rhetoric and Rhetorical Criticism.
- Ancient Rhetoric From Aristotle to Philostratus.
- Ancient Rhetoric For Contemporary Students by Sharon Crowley.
- Art Of Rhetoric By Aristotle.
- Conversations In American Literature: Language, Rhetoric, Culture By Robin Aufses.
- Encyclopaedia of Rhetoric.
- On Rhetoric: Theory of Civic Discourse by Aristotle.
- Politics and Rhetoric: The Persuasive Power of Metaphor.
- Rhetoric By Jennifer Richards.
- Rhetoric In Details By John Benjamins.
- Rhetorical Grammar By Martha Kolln.
- Sourcebook on Rhetoric By James Jasinski.
- The Language of Composition: Reading, Writing, Rhetoric by Renee Shea.
- The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.
- The Rhetoric of Reason By James Crosswhite.
- Trivium- Liberal Arts of Logic, Grammar and Rhetoric By Sister Mirriam Joseph.
- Writing Arguments: a RHETORIC With Reading by John Ramage.

B. Follow Every step of the Book, I have chose to do Rhetorical Analysis.

15. Take notes on literature.

16. By reading, you will identify certain questions within the area of research.

17. Master the literature in the area of research.

18. Use Rules of Writing.

PART 6: Analysis Of Book By Using External Sources.

Step 40-Aids To Reading, Listening, Conversation, Debate

Any aid to reading that lies outside the book being read we may speak of as extrinsic. By “intrinsic reading” we mean reading a book in itself, quite apart from all other books. By “extrinsic reading” we mean reading a book in the light of other books. So far we have intentionally avoided mentioning any extrinsic aids to reading. The rules of reading we have set forth are rules of intrinsic reading—they do not include going outside the book to discover what it means. There are good reasons for our having insisted up to now on your primary task as a reader—taking the book into your study and working on it by yourself, with the power of your own mind, and with no other aids. But it would be wrong to continue insisting on this. Extrinsic aids can help. And sometimes they are necessary for full understanding.

One reason why we have said nothing about extrinsic reading up to now is that intrinsic and extrinsic reading tend to fuse in the actual process of understanding and criticising a book. We really cannot help bringing our experience to bear on the tasks of interpretation and criticism and even outlining. We must have read other books before this one; no one starts his reading career by reading analytically. We may not bring to bear our experience both of other books and of life as systematically as we should, but we nevertheless measure the statements and conclusions of a writer against other things that we know, from many different sources. Thus it is common sense to say that no book should be, because no book can be, read entirely and completely in isolation.

But the main reason for avoiding extrinsic aids up to this point is that many readers depend on them too slavishly, and we wanted you to realize that this is unnecessary. Reading a book with a dictionary in the other hand is a bad idea, although this does not mean you should never go to a dictionary for the meanings of words that are strange to you. And seeking the meaning of a book that puzzles you in a commentary is often ill-advised. On the whole, it is best to do all that you can by yourself before seeking outside help; for if you act consistently on this principle, you will find that you need less and less outside help.

The extrinsic aids to reading fall into four categories. In the order in which we will discuss them in this chapter, they are: first, relevant experiences; second, other books; third, commentaries and abstracts; fourth, reference books.

How and when to use any of these types of extrinsic aids cannot be stated for every particular case. Some general suggestions can be made, however. It is a common-sense maxim of reading that outside help should be sought whenever a book remains unintelligible to you, either in whole or part, *after you have done your best to read it according to the rules of intrinsic reading.*

The Role of Relevant Experience

There are two types of relevant experience that may be referred to for help in understanding difficult books. We have already mentioned the distinction involved, when we spoke in Chapter 6 of the difference between common experience and special experience. Common experience is available to all men and women just because they are alive. Special experience must be actively sought and is available only to those who go to the trouble of acquiring it. The best example of special experience is an experiment in a laboratory, but a laboratory is not always required. An anthropologist may acquire special experience by traveling to the Amazon basin, for example, to study the aboriginal inhabitants of a region that has not yet been explored. He thereby gains experience that is not ordinarily available to others, and that will never be available to many; for if large numbers of scientists invade the region, it will cease to be unique. Similarly, the experience of the astronauts on the moon is highly special, although the moon is not a laboratory in the ordinary sense of the term. Most men do not have the opportunity of knowing what it is like to live on an airless planet, and it will be centuries before this becomes a common experience, if it ever does. Jupiter, too, with its enormously greater gravity, will remain a "laboratory" in this sense for a long time to come, and may always be such.

Common experience does not have to be shared by everyone in order to be common. *Common* is not the same as *universal.* The experience of being a child of parents, for example, is not shared by every human being, for some are orphans from birth. However, family life is nevertheless common experience, because most men and women, in the ordinary course of their lives, share it. Nor is sexual love a universal experience, although it is common, in the sense we are giving the word *common.* Some men and women never experience it, but the experience is shared by such a high proportion of humans that it cannot be called special. (This does not mean that sexual activity cannot be studied in the laboratory, as in fact it has been.) The experience of being taught is not universal, either, for some men and women never go to school. But it, too, is common.

The two kinds of experience are mainly relevant to different kinds of books. Common experience is most relevant to the reading of fiction, on the one hand, and to the reading of philosophy, on the other. Judgments concerning the verisimilitude of a novel are almost wholly based on common experience; the book, we say, is either true or not true to our experience of life as it is led by most people, ourselves included. The philosopher, like the poet, appeals to the common experience of mankind. He does no work in laboratories or research in the field. Hence to understand and test a philosopher's leading principles you do not need the extrinsic aid of special experience. He refers you to your own common sense and your daily observation of the world in which you live.

Special experience is mainly relevant to the reading of scientific works. To understand and judge the inductive arguments in a scientific book, you must be able to follow the evidence that the scientist reports as their basis. Sometimes the scientist's description of an experiment is so vivid and clear that you have no trouble. Sometimes illustrations and diagrams help to acquaint you with the phenomena described.

Both common and special experience are relevant to the reading of history books. This is because history partakes both of the fictional and the scientific. On the one hand, a narrative history is a story, having a plot and characters, episodes, complications of action, a climax, an aftermath. The common experience that is relevant to reading novels and plays is relevant here, too. But history is also like science, in the sense that at least some of the experience on which the historian bases his work is quite special. He may have read a document or many documents that the reader could not manage to see without great trouble. He may have done extensive research, either into the remains of past civilizations or in the form of interviews with living persons in faraway places.

How do you know whether you are making proper use of your experience to help you understand a book? The surest test is one we have already recommended as a test of understanding: ask yourself whether you can give a concrete example of a point that you feel you understand. We have many times asked students to do this, only to find that they could not. The students appeared to have understood the point, but they were completely at a loss when called upon to supply an example. Obviously, they had not really understood the book. Test yourself in this way when you are not quite sure whether you have grasped a book. Take Aristotle's discussion of virtue in the *Ethics,* for example. He says over and over that virtue is a mean between the extremes of defect and excess. He gives some concrete examples; can you supply others? If so, you have understood his general point. If not, you should go back and read his discussion again.

Other Books as Extrinsic Aids to Reading

We will have more to say later about syntopical reading, where more than one book is read on a single subject. For the moment, we want to say a few things about the desirability of reading other books as extrinsic aids to the reading of a particular work.

Our advice applies particularly to the reading of so-called great books. The enthusiasm with which people embark on a course of reading great books often gives way, fairly soon, to a feeling of hopeless inadequacy. One reason, of course, is that many readers do not know how to read a single book very well. But that is not all. There is another reason: namely, that they think they should be able to understand the first book they pick up, without having read the others to which it is closely related. They may try to read *The Federalist Papers* without having first read the Articles of Confederation and the Constitution. Or they may try all these without having read Montesquieu's *The Spirit of Laws,* Rousseau's *The Social Contract,* and Locke's second treatise *Of Civil Government.*

Not only are many of the great books related, but also they were written in a certain order that should not be ignored. A later writer has been influenced by an earlier one. If you read the earlier writer first, he may help you to understand the later one. Reading related books in relation to one another and in an order that renders the later ones more intelligible is a basic common-sense maxim of extrinsic reading.

The utility of this kind of extrinsic reading is simply an extension of the value of context in reading a book by itself. We have seen how the context must be used to interpret words and sentences to find terms and propositions. Just as the whole book is the context for any of its parts, so related books provide an even larger context that helps you interpret the book you are reading.

It has often been observed that the great books are involved in a prolonged conversation. The great authors were great readers, and one way to understand them is to read the books they read. As readers, they carried on a conversation with other authors, just as each of us carries on a conversation with the books we read, though we may not write other books.

To join this conversation, we must read the great books in relation to one another, and in an order that somehow respects chronology. The conversation of the books takes place in time. Time is of the essence here and should not be disregarded. The books can be read from the present into the past or from the past into the present. Though the order from past to present has certain advantages through being more natural, the fact of chronology can be observed in either way.

It should be noted, incidentally, that the need to read books in relation to one another applies more to history and philosophy than to science and fiction. It is most important in the case of philosophy, because philosophers are great readers of each other. It is probably least important in the case of novels or plays, which, if they are really good, can be read in isolation, although of course the literary critic will not want to confine himself to doing so.

How to Use Commentaries and Abstracts

A third category of extrinsic aids to reading includes commentaries and abstracts. The thing to emphasize here is that such works should be used wisely, which is to say sparingly. There are two reasons for this.

The first is that commentators are not always right in their comments on a book. Sometimes, of course, their works are enormously useful, but this is true less often than one could wish. The handbooks and manuals that are widely available in college bookstores and in stores frequented by high school students are often particularly misleading. These works purport to tell the student everything he has to know about a book that has been assigned by one of his teachers, but they are sometimes woefully wrong in their interpretations, and besides, as a practical matter, they irritate some teachers and professors.

In defense of handbooks, it must be conceded that they are often invaluable for passing examinations. Furthermore, to balance the fact that some teachers are irritated by the errors of handbooks, other teachers use them themselves in their teaching.

The second reason for using commentaries sparingly is that, even if they are right, they may not be exhaustive. That is, you may be able to discover important meanings in a book that the author of a commentary about it has not discovered. Reading a commentary, particularly one that seems very self-assured, thus tends to limit your understanding of a book, even if your understanding, as far as it goes, is correct.

Hence, there is one piece of advice that we want to give you about using commentaries. Indeed, this comes close to being a basic maxim of extrinsic reading. Whereas it is one of the rules of intrinsic reading that you should read an author's preface and introduction *before* reading his book, the rule in the case of extrinsic reading is that you should not read a commentary by someone else until *after* you have read the book. This applies particularly to scholarly and critical introductions. They are properly used only if you do your best to read the book first, and then and only then apply to them for answers to questions that still puzzle you. If you read them first they are likely to distort your reading of the book. You will tend to see only the points made by the scholar or critic, and fail to see other points that may be just as important.

There is considerable pleasure associated with the reading of such introductions when it is done in this way. You have read the book and understood it. The writer of the introduction has also read it, perhaps many times, and has his own understanding of it. You approach him, therefore, on essentially equal terms. If you read his introduction before reading the book, however, you are at his mercy.

Heeding this rule, that commentaries should be read after you have read the book that they expound and not before, applies also to handbooks. Such works cannot hurt you if you have already read the book and know where the handbook is wrong, if it is. But if you depend wholly on the handbook, and never read the original book, you may be in bad trouble.

And there is this further point. If you get into the habit of depending on commentaries and handbooks, you will be totally lost if you cannot find one. You may be able to understand a particular book with the help of a commentary, but in general you will be a worse reader.

The rule of extrinsic reading given here applies also to abstracts and plot digests. They are useful in two connections, but in those two only. First, they can help to jog your memory of a book's contents, if you have already read it. Ideally, you made such an abstract yourself, in reading the book analytically, but if you have not done so, an abstract or digest can be an important aid. Second, abstracts are useful when you are engaged in syntopical reading, and wish to know whether a certain work is likely to be germane to your project. An abstract can never replace the reading of a book, but it can sometimes tell you whether you want or need to read the book or not.

How to Use Reference Books

There are many kinds of reference books. In the following section we will confine ourselves mainly to the two most used kinds, dictionaries and encyclopedias.

However, many of the things we will have to say apply to other kinds of reference books as well.

It is not always realized, yet it is nevertheless true, that a good deal of knowledge is required before you can use a reference book well. Specifically, four kinds of knowledge are required. Thus a reference book is an antidote to ignorance in only a limited way. It cannot cure total ignorance. It cannot do your thinking for you.

To use a reference book well, you must, *first,* have some idea, however vague it may be, of what you want to know. Your ignorance must be like a circle of darkness surrounded by light. You want to bring light to the dark circle. You cannot do that unless light surrounds the darkness. Another way to say this is that you must be able to ask a reference book an intelligible question. It will be no help to you if you are wandering, lost, in a fog of ignorance.

Second, you must know where to find out what you want to know. You must know what kind of question you are asking, and which kinds of reference books answer that kind of question. There is no reference book that answers all questions; all such works are specialists, as it were. Practically, this comes down to the fact that you must have a fair overall knowledge of *all* of the major types of reference books before you can use *any one* type effectively.

There is a *third,* and correlative, kind of knowledge that is required before a reference book can be useful to you. You must know how the particular work is organized. It will do you no good to know what you want to know, and to know the kind of reference book to use, if you do not know how to use the particular work. Thus there is an art of reading reference books, just as there is an art to reading anything else. There is a correlative art to making reference books, by the way. The author or compiler should know what kind of information readers will seek, and arrange his book to fit their needs. He may not always be able to anticipate these, however, which is why the rule that you should read the introduction and preface to a book before reading the book itself applies particularly here. Do not try to use a reference book before getting the editor's advice on *how* to use it.

Of course, not all kinds of questions can be answered by reference books. You will not find in any reference book the answers to the three questions that God asks the angel in Tolstoy's story, *What Men Live By*—namely, "What dwells in man?" "What is not given to man?" and "What do men live by?" Nor will you find the answers to another question that is also used as the title of a Tolstoy story: "How much land does a man need?" And there are many such questions. Reference books are only useful when you know which kinds of questions can be answered by them, and which cannot. This comes down to knowing the

sorts of things that men generally agree on. Only those things about which men generally and conventionally agree are to be found in reference books. Unsupported opinions have no business there, though they sometimes creep in.

We agree that it is possible to know when a man was born, when he died, and facts about similar matters. We agree that it is possible to define words and things, and that it is possible to sketch the history of almost anything. We do not agree on moral questions or on questions about the future, and so these sorts of things are not to be found in reference books. We assume in our time that the physical world is orderable, and thus almost everything about it is to be found in reference books. This was not always so; as a result, the history of reference books is interesting in itself, for it can tell us much about changes in men's opinions as to what is knowable.

As you can see, we have just been suggesting that there is a *fourth* requirement for the intelligent use of reference books. You must know *what* you want to know; you must know *in what reference work* to find it; you must know *how* to find it in the reference work; and you must know that it is *considered knowable* by the authors or compilers of the book. All this indicates that you must know a good deal before you can use a work of reference. Reference books are useless to people who know nothing. They are not guides to the perplexed.

How to Use a Dictionary

As a reference book, the dictionary is subject to all the considerations outlined above. But the dictionary also invites a playful reading. It challenges anyone to sit down with it in an idle moment. There are worse ways to kill time.

Dictionaries are full of arcane knowledge and witty oddments. Over and above that, of course, they have their more sober employments. To make the most of these, one has to know how to read the special kind of book a dictionary is.

Santayana's remark about the Greeks—that they were the only uneducated people in European history—has a double significance. The masses were, of course, uneducated, but even the learned few—the leisure class—were not educated in the sense that they had to sit at the feet of foreign masters. Education, in that sense, begins with the Romans, who went to school to Greek pedagogues, and became cultivated through contact with the Greek culture they had conquered.

It is not surprising, therefore, that the first dictionaries were glossaries of Homeric words, intended to help Romans read the *Iliad* and *Odyssey* as well as other Greek literature employing the "archaic" Homeric vocabulary. In the same way, many of us today need a glossary to read Shakespeare, or if not Shakespeare, Chaucer.

There were dictionaries in the Middle Ages, but they were usually encyclopedias of worldly knowledge comprised of discussions of the most important technical terms employed in learned discourse. There were foreign-language dictionaries in the Renaissance (both Greek and Latin), made necessary by the fact that the works that dominated the education of the period were in the ancient languages. Even when the so-called vulgar tongues—Italian, French, English—gradually replaced Latin as the language of learning, the pursuit of learning was still the privilege of the few. Under such circumstances, dictionaries were intended for a limited audience, mainly as an aid to reading and writing worthy literature.

Thus we see that from the beginning the educational motive dominated the making of dictionaries, although there was also an interest in preserving the purity and order of the language. As contrasted with the latter purpose, the *Oxford English Dictionary* (known familiarly as the OED), begun in 1857, was a new departure, in that it did not try to dictate usage but instead to present an accurate historical record of every type of usage—the worst as well as the best, taken from popular as well as elegant writing. But this conflict between the lexicographer as self-appointed arbiter and the lexicographer as historian can be regarded as a side-issue, for the dictionary, however constructed, is primarily an educational instrument.

This fact is relevant to the rules for using a dictionary well, as an extrinsic aid to reading. The first rule of reading any book is to know what kind of book it is. That means knowing what the author's intention was and what sort of thing you can expect to find in his work. If you look upon a dictionary merely as a spelling book or guide to pronunciation, you

will use it accordingly, which is to say not well. If you realize that it contains a wealth of historical information, crystallized in the growth and development of language, you will pay attention, not merely to the variety of meanings listed under each word, but also to their order and relation.

Above all, if you are interested in advancing your own education, you will use a dictionary according to its primary intention—as a help in reading books that might otherwise be too difficult because their vocabulary includes technical words, archaic words, literary allusions, or even familiar words used in obsolete senses.

Of course, there are many problems to be solved in reading a book well other than those arising from an author's vocabulary. And we have warned against— particularly on the first reading of a difficult book—sitting with the book in one hand and the dictionary in the other. If you have to look up too many words at the beginning, you will certainly lose track of the book's unity and order. The dictionary's primary service is on those occasions when you are confronted with a technical word or with a word that is wholly new to you. Even then, we would not recommend looking up even these during your first reading of a good book unless they seem to be important to the author's general meaning.

This suggests several other negative injunctions. There is no more irritating fellow than the one who tries to settle an argument about communism, or justice, or freedom, by quoting from the dictionary. Lexicographers may be respected as authorities on word usage, but they are not the ultimate founts of wisdom. Another negative rule is: Don't swallow the dictionary. Don't try to get word-rich quick by memorizing a fancy list of words whose meanings are unconnected with any actual experience. In short, do not forget that the dictionary is a book about words, not about things.

If we remember this, we can derive from that fact all the rules for using a dictionary intelligently. Words can be looked at in four ways.

1. **WORDS ARE PHYSICAL THINGS—writable words and speakable sounds. There must, therefore, be uniform ways of spelling and pronouncing them, though the uniformity is often spoiled by variations, and in any event is not as eternally important as some of your teachers may have indicated.**

2. **WORDS ARE PARTS OF SPEECH. Each single word plays a grammatical role in the more complicated structure of a phrase or sentence. The same word can vary in different usages, shifting from one part of speech to another, especially in a non-inflected language like English.**

3. **WORDS ARE SIGNS. They have meanings, not one but many. These meanings are related in various ways. Sometimes they shade from one into another; sometimes a word will have two or more sets of totally unrelated meanings. Through their meanings, different words are related to one another—as synonyms sharing in the same meaning even though they differ in shading; or**

as antonyms through opposition or contrast of meanings. Furthermore, it is in their capacity as signs that we distinguish words as proper or common names (according as they name just one thing or many that are alike in some respect); and as concrete or abstract names (according as they point to something we can sense, or refer to some aspect of things that we can understand by thought but not observe through our senses).

Finally, 4. WORDS ARE CONVENTIONAL. They are man-made signs. That is why every word has a history, a cultural career in the course of which it goes through certain transformations. The history of words is given by their etymological derivation from original word-roots, prefixes, and suffixes; it includes the account of their physical changes, both in spelling and pronunciation; it tells of the shifting meanings, and which among them are archaic and obsolete, which are current and regular, which are idiomatic, colloquial, or slang.

A good dictionary will answer all of these four different kinds of questions about words. The art of using a dictionary consists in knowing what questions to ask about words and how to find the answers. We have suggested the questions. The dictionary itself tells you how to find the answers.

As such, it is a perfect self-help book, because it tells you what to pay attention to and how to interpret the various abbreviations and symbols it uses in giving you the four varieties of information about words. Anyone who fails to consult the explanatory notes and the list of abbreviations at the beginning of a dictionary has only himself to blame if he is not able to use it well.

How to Use an Encyclopedia

Many of the things we have said about dictionaries apply to encyclopedias also. Like the dictionary, the encyclopedia invites a playful reading. It too is diverting, entertaining, and, for some people, soothing. But it is just as vain to try to read an encyclopedia through as a dictionary. The man who knew an encyclopedia by heart would be in grave danger of incurring the title *idiot savant*—"learned fool."

Many people use a dictionary to find out how to spell and pronounce words. The analogous employment of an encyclopedia is to use it only to look up dates and places and other such simple facts. But this is to under-use, or misuse, an encyclopedia. Like dictionaries, such works are educational as well as informational tools. A glance at their history will confirm this.

Though the word "encyclopedia" is Greek, the Greeks had no encyclopedia, and for the same reason that they had no dictionary. The word meant to them not a book about knowledge, a book in which knowledge reposed, but knowledge itself— all the knowledge that an educated man should have. It was again the Romans who first found encyclopedias necessary; the oldest extant example is that of Pliny.

Interestingly enough, the first alphabetically-arranged encyclopedia did not appear until about 1700. Most of the great encyclopedias since then have been alphabetical. It is the easiest of all arrangements, and it made possible great strides in encyclopedia-making.

Encyclopedias present a different problem from word-books. An alphabetical arrangement is natural for a dictionary. But is the world, which is the subject matter of an encyclopedia, arranged alphabetically? Obviously not. Well then, how is the world arranged and ordered? This comes down to asking how knowledge is ordered.

The ordering of knowledge has changed with the centuries. All knowledge was once ordered in relation to the seven liberal arts—grammar, rhetoric, and logic, the trivium; arithmetic, geometry, astronomy, and music, the quadrivium. Medieval encyclopedias reflected this arrangement. Since the universities were arranged according to the same system, and students studied according to it also, the arrangement was useful in education.

The modern university is very different from the medieval one, and the change is reflected in modern encyclopedias. The knowledge that they report is divided up in fiefs, or specialties, that are roughly equivalent to the various departments of the university. But this arrangement, although it forms the backbone structure of an encyclopedia, is masked by the alphabetical arrangement of the material.

It is this infra-structure—to take a term from the sociologists—that the good reader and user of an encyclopedia will seek to discover. It is true that it is primarily factual information that he wants from his set. But he should not be content with facts in isolation.

The encyclopedia presents him with an arrangement of facts— facts in relation to other facts. The understanding, as contrasted with the mere information, that an encyclopedia can provide depends on the recognition of such relations.

In an alphabetically-arranged encyclopedia, these relations are to a large extent obscured. In a topically-arranged encyclopedia, they are, of course, highlighted. But topical encyclopedias have many disadvantages, among them the fact that most readers are not accustomed to using them. Ideally, the best encyclopedia would be one that had both a topical and an alphabetical arrangement. Its presentation of material in the form of separate articles would be alphabetical, but it would also contain some kind of topical key or outline—essentially, a table of contents. (A table of contents is a topical arrangement of a book, as opposed to an index, which is an alphabetical arrangement.) As far as we know, there is no such encyclopedia on the market today, but it would be worth the effort to try to make one.

In default of the ideal, the reader must fall back on the help and advice provided him by an encyclopedia's editors. Any good encyclopedia includes directions about how to use it effectively, and these should be read and followed. Often, these directions require that the user go first to the set's index, before turning to one of the alphabetically-arranged volumes. Here, the index is serving the function of a table of contents, though not very well; for it gathers together, under one heading, references to discussions in the encyclopedia that may be widely separated in space but that are nevertheless about the same general subject. This reflects the fact that although an index is of course alphabetically arranged, its so-called analyticals—that is, the breakdowns under a main entry—are topically arranged. But the topics themselves must be in alphabetical order, which is not necessarily the best arrangement. Thus the index of a really good encyclopedia such as Britannica goes part of the way toward revealing the arrangement of knowledge that the work reflects. For this reason, any reader who fails to use the index has only himself to blame if the work does not serve his needs.

There are negative injunctions associated with the use of encyclopedias, just as there are for dictionaries. Encyclopedias, like dictionaries, are valuable adjuncts to the reading of good books—bad books do not ordinarily require their presence; but, as before, it is wise not to enslave yourself to an encyclopedia. Again, as with dictionaries, encyclopedias are not to be used for the settling of arguments where these are based on differences of opinion. Nevertheless, they *should* be used to end disputes about matters of fact as quickly and permanently as possible. Facts should never be argued about in the first place. An encyclopedia makes this vain effort unnecessary, because encyclopedias are full of facts. Ideally, they are filled with nothing else. Finally, although dictionaries usually agree in their accounts of words, encyclopedias often do not agree in their accounts of facts. Hence, if you are really interested in a subject and are depending on encyclopedic treatments of it, do not restrict yourself to just one encyclopedia. Read more than one, and preferably ones written at different times.

We noted several points about words that the user should keep in mind when he consults a dictionary. In the case of encyclopedias, the analogous points are about facts, for an encyclopedia is about facts as a dictionary is about words.

1. **FACTS ARE PROPOSITIONS. Statements of fact employ words in combination, such as "Abraham Lincoln was born on February 12, 1809," or "the atomic number of gold is 79." Facts are not physical things, as words are, but they do require to be explained. For thorough knowledge, for understanding, you must also know what the significance of a fact is—how it affects the truth you are seeking. You do not know much if all you know is what the fact is.**

2. **FACTS ARE "TRUE" PROPOSITIONS. Facts are not opinions. When someone says "it is a fact that," he means that it is generally agreed that such is the case. He never means, or never should mean, that he alone, or he together with a minority of observers, believes such and such to be the case. It is this characteristic of facts that gives the encyclopedia its tone and style. An encyclopedia that contains the unsupported opinions of its editors is dishonest; and although an encyclopedia may report opinions (for example, in a phrase like "it is held by some that this is the case, by others that that is the case"), it must clearly label them. The requirement that an encyclopedia report the facts of the case and not opinions about it (except as noted above) also limits the work's coverage. It cannot properly deal with matters about which there is no consensus—with moral questions, for example. If it does deal with such questions, it can only properly report the disagreements among men about them.**

3. **FACTS ARE REFLECTIONS OF REALITY. Facts may be either (a) informational singulars or (b) relatively unquestioned generalizations, but in either case they are held to represent the way things really are. (The birth date of Lincoln is an informational singular; the atomic number of gold implies a relatively unquestioned generalization about matter.) Thus facts are not ideas or concepts, nor are they theories in the sense of being mere speculations about reality. Similarly, an explanation of reality (or of part of it) is not a fact until and unless there is general agreement that it is correct.**

   There is one exception to the last statement. An encyclopedia can properly describe a theory that is no longer held to be correct, in whole or in part, or one that has not yet been fully validated, when it is associated with a topic, person or school that is the subject of an article. Thus, for example, Aristotle's views on the nature of celestial matter could be expounded in an article on Aristoteleanism even though we no longer believe them to be true.

Finally, 4. FACTS ARE TO SOME EXTENT CONVENTIONAL. Facts change, we say. We mean that some propositions that are considered to be facts in one epoch are no longer considered to be facts in another. Insofar as facts are "true" and represent reality, they cannot change, of course, because truth, strictly speaking, does not change, nor does reality. But not all propositions that we take to be true are really true; and we must concede that almost any given proposition that we take to be true can be falsified by more patient or more accurate observation and investigation. This applies particularly to the facts of science.

Facts are also—again to some extent—culturally determined. An atomic scientist, for example, maintains a complicated, hypothetical structure of reality in his mind that determines—for him—certain facts that are different from the facts that are determined for and accepted by a primitive. This does not mean that the scientist and the primitive cannot agree on any facts; they must agree, for instance, that two plus two is four, or that a physical whole is greater than any of its parts. But the primitive may not agree with the scientist's facts about nuclear particles, just as the scientist may not agree with the primitive's facts about ritual magic. (That was a hard sentence to write, because, being culturally determined ourselves, we tend to agree with the scientist rather than the primitive and were thus tempted to put the second "fact" in quotation marks. But that is precisely the point.)

A good encyclopedia will answer your questions about facts if you remember the points about facts that we have outlined above. The art of using an encyclopedia as an aid to reading is the art of asking the proper questions about facts. As with the dictionary, we have merely suggested the questions; the encyclopedia will supply the answers.

You should also remember that an encyclopedia is not the best place to pursue understanding. Insights may be gained from it about the order and arrangement of knowledge; but that, although an important subject, is nonetheless a limited one. There are many matters required for understanding that you will not find in an encyclopedia.

There are two particularly striking omissions. An encyclopedia, properly speaking, contains no arguments, except insofar as it reports the course of arguments that are now widely accepted as correct or at least as of historical interest. Thus a major element in expository writing is lacking. An encyclopedia also contains no poetry or imaginative literature, although it may contain facts about poetry and poets. Since both the imagination and the reason are required for understanding, this means that the encyclopedia must be a relatively unsatisfying tool in the pursuit of it.

Step 41-Commentaries On Book and What Are Other Take on?

1. **Rule 1-Use Commentaries**

A. Read or listen 25min and 5min break

- Read or Listen 20 pages an Hour according Mortimer Adler.

B. Read or Listen following Tools to Use Commentaries on Books.

1. Folder Commentaries on the Book.
2. Speed of Tool Books:Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed to Find Commentaries on Books.

C. Speed of Audiobook.

- Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed to **Use Commentaries.**

1. **Rule 2-What are other take on this book**

D. Read or listen 25min and 5min break

- Read or Listen 20 pages an Hour according Mortimer Adler

E. Read or Listen following.

1. Books, Sermon, Journals, Newspaper, Academic Text.
2. Speed of Tool Books:Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed to Find What are other takes on this Book.

F. Speed of Audiobook.

- Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed.

Step 42-Review Of The Book

A. Read or listen 25min and 5min break

- Read or Listen 20 pages an Hour according Mortimer Adler

B. Read or Listen between 1-50 times the book

C. Speed of Audiobook

- Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed

D. What is the: title, author, publisher, date, length, and ISBN

E. Highlight any notable aspects, good or bad, of the book's design and production. Consider aesthetics, typography, cover, design, images, table of contents, notes, references, index.

F. What qualifies the author to write this book?

G. Does the book deliver on its promise? (What does it promise? What does it deliver? Cite evidence.)

H. What is the Style (casual, formal, light, humours, serious, scholarly . . .), point of view

I. What audience am I writing for? Consider where your review will be published. Who will be reading it, and what will they want to know about a book before buying it? Put yourself in the perspective of the intended audience, even if you are not a part of it.

J. Who is the audience? (i.e. age, reading level, interests, specialties…)

K. What genres/sub-genres does this fit into? Define the primary genre, then find elements of other sub-genres that may not have been immediately identifiable.

L. For nonfiction books what is your assessment of the quality of the argument, evidence, and exposition?

- Is the book intellectually honest?

M. What, if anything, is the original contribution this book makes?

N. What did you learn? What insights did you gain? Does the book make a unique contribution to knowledge or wisdom? Does it provide a new and better way to present difficult material?

O. What surprised you? Did you ever have an ah-ha moment while reading the book?

P. Was it easy or difficult to read? Fun and rewarding to read?

Q. For a fiction book, consider: Did you get lost in the book? What are the salient plot points? Did the book achieve emotional entrainment? Was the character development intriguing? Did you care about the characters?

R. Which part attracts you most? Which ones were boring? Which chapter is the key-point of the story? Which portions did you like most? Why?

S. Does The Book, Text, Debate, Discussion, Speech tries to use Sneaky technique to take away the audience's attention from something more important at that time?

T. Does The Book, Text, Debate, Discussion, Speech tries to use Sneaky technique to take away the audience's attention from something more important?

U. Does The author, Writer, Speaker tries to use Sneaky technique to take away the audience's attention from something more important?

V. What is your favourite quote from the book? Why?

W. What creative value does this book contribute?

X. How does this book affect you on the whole? How does the author achieve this?

Y. How does each role affect the story?

Z. What is missing?

AA. Does the book sparkle? A book that sparkles is fun to read, breaks new ground, communicates in memorable ways, uses images effectively, is accessible to a broad audience, and influences a significant readership to change their assumptions, beliefs, or ways of thinking.

BB. Judge the book. Is it good or bad? Why?

CC. Who are your target readers for your review? Are you writing this review to serve someone? Is your review outstanding among all the reviews of this book?

DD. What, if anything, makes this an important work? What does the reader stand to gain by reading this book?

EE. Book Style

- Reading level, vocabulary, sentence length.
- Point of view (omniscient narrator, first person, . . .)
- Serious, satire, humorous, academic, pedantic, frivolous
- Comforting, call to action, alarming, disturbing,

FF. Was I confused at any point while reading? If the writing was unclear, note this. If you didn't understand it, other readers probably won't either.

GG. Did I care about the characters? If the characters weren't compelling in the slightest, the story likely fell flat. If you noticed this, include it in your review. (This is primarily a consideration in fiction and memoir.)

HH. Did it have a compelling plot? Without a compelling plot, any work involving a storyline will lose the reader's attention. If you got bored, make it clear in your review.

II. Was the dialogue believable? If it was difficult to believe anyone would talk like the characters in the book, the characters themselves were probably difficult to imagine.

JJ. Were the events believable? At its core, a book (unless purely informational) is a story. If a story fails to be credible, the book cannot succeed at being a book.

KK. Did any quotes strike me? Was anything said that you found interesting, thought-provoking, or tear-jerking? Note these strong moments in your review! (If this quote spoils a surprise moment in the book, include a warning at the beginning of your review.)

LL. Was there any information I thought to be inaccurate? Credibility is important an any genre. If one piece of false information is presented, readers will lose trust in the entire book.

MM. Are the illustrations engaging? If it includes illustrations, note if they are eye-catching or bland. Pay special attention to this if you are reviewing a children's book.

NN. Is there any questionable/profane/graphic content? Many readers want to be aware of this kind of content before picking up a book. Even if it doesn't bother you, note anything that may be questionable to other readers.

OO. What is the author's voice like? Describe how the author approaches the reader. Is the tone comedic, conversational, professional, or aloof?

PP. Tone is the feeling that a book evokes in the reader. In many cases, this category best answers the question, "What are you in the mood for?" A more extensive list of tone descriptors and a brief definition of each is available in the above reference.

- Humorous, solemn, distant, intimate, ironic, arrogant, condescending, authoritative, scholarly, sentimental, angry, melancholy, anguished, youthful, optimistic, deadpan, satirical, maudlin, self-righteous, and so on.

QQ. What is the author's purpose? Consider why this book was written and what the author intends to convey to the audience.

RR. Book Semantics

- Credible, speculative, innovative, drivel, …
- Informative, argumentative, entertaining, …
- Well organised, well argued, excellent supporting evidence,
- Muddled logic, rambling
- Coherence, consistency, flow.

SS. Is the author's purpose accomplished? Now consider how the answer above came across. Was it clear, or did you have to "dig" for it?

TT. What are the author's credentials? What makes this author the only person who could write this book? Do they have a certain education or experience that makes them unique?

UU. Is there an index or bibliography? This extra material, though not necessary, is good to know about before picking up the book.

VV. What other books are similar to this one? What other titles have the same style as this one? Compare it to other books to give your audience a better idea of what it is like.

WW. What did I learn while reading? Did this book make you think more deeply about any academic or moral topics?

XX. Who would I recommend this book to? What specific audience would enjoy this book? Is it worth the time for others to read it?

YY. Tone is the feeling that a book evokes in the reader. In many cases, this category best answers the question, "What are you in the mood for?" A more extensive list of tone descriptors and a brief definition of each is available in the above reference.

- Humorous, solemn, distant, intimate, ironic, arrogant, condescending, authoritative, scholarly, sentimental, angry, melancholy, anguished, youthful, optimistic, deadpan, satirical, maudlin, self-righteous, and so on.

Step 43-Analysing Author and Publisher and Audience

Author

1. What is the author's background, Family, Family History, Every author's family what position they were in, university credentials, Ideology and worldview?
2. What credentials does s/he have?
3. What education and at what level?
4. The reason the writer wrote the text?
5. The writer's position on a particular subject?
6. How much research went into writer's own work?
7. How much experience does the author have?
8. Is the writer an expert in the topic at issue?
9. Is the author recognised by others as an authority in the field?
10. Is the author having knowledge of the field?
11. Did the author arrived to this conclusion through careful analysis?
12. Is this author the best representative for one or another side?
13. What are the author's bias and purpose?
14. Does the speaker or writer have personal or professional interest in the information they are presenting?
15. How a writer might purposely present ideas or events in ways that favour a particular political, organisational, religious?
16. Does the author present facts and explain the ideas to reader?
17. Is the author uses facts and opinions to argue for or against some idea?
18. Is the author tries to amuse or interest the reader with humour, suspense and stories?
19. Look at the language in the passage:
    A. If it is neutral and objective, the purpose is probably simply to inform the reader
    B. If it includes terms that are strongly positive, negative or emotional, the purpose is probably to persuade the reader
    C. It is including situations or descriptions that are funny, surprising, or intriguing the writer probably wants to entertain the reader.
20. Is the author biased:

A. Is the author presenting only one side of an argument?
B. Is it including only facts or examples that support the writer's opinion?
C. Is it using the language intended to influence the reader's emotions?
D. Is it ridicules other opinions or views

21. Does the author have contradictory information, cherry pick evidence or carefully select language in which to present information favourably?
22. Is the author or speaker speaks/writes for the company, special interest group, an institute, a foundation think tank or a political party?
23. Does she get paid for this endorsement or opinion?
24. Does the person have interest on this topic or has any personal gain? If not then this writer or speaker is disinterested, impartial (unbiased) objective
25. If the speaker/writer has interested, than why does s/he present the information/ argument/data in such a way?
26. In surveys or studies, has the author worded the questions in such a way to ensure the sought after response?
27. Is the company paid the author to proof that the devise or product is better than any other product in the market?
28. Is the industry try to defend the product? Did the author put the best spin on its information?
29. When was the survey or studies or experiment done?
30. At what day were the tests, surveys or experiment done?
31. Purpose of the author writing?
32. How did the author handle the opposing view? Is the author trying to persuade the reader to some belief?
33. Does the author fairly handled the opposing view? Or did the author dismiss opposing points without regard to their possible value?
34. Does the writer made any straw man fallacy, misrepresenting opposing views to more easily move them down?
35. Did the author used slanted language or commit personal attack?
36. Does the writer make sweeping generalisations or demonstrate an either / or approach to complicated issues, thereby revealing a strong bis toward one side?
37. Does the writer pretend to be objective?
38. Does the writer intends to be ironic or satirical, if he or she is clearly exaggerating for effect?
39. Does the writer admits to guesswork and speculation?

40. What are the author's sources?
41. Did the writer respond to those who have preceded them?
42. Has the writer depended on the primary source or secondary source?
43. Has the writer misquoted the primary source or has he quoted correctly the primary source?
44. Has the writer uses statistics or data, has he used primary source?
45. Has the writer interpreted the data or survey or statistics biased/unbiased?
46. Has the author correctly interpreted the information?
47. Has the author incorrectly interpreted information?

Publisher

1. Who is the publisher or sponsor?
2. Does writer use reliable publisher?
3. Does the writer use reputable publications?
4. Does the editor of the publication is respected and reputable?
5. Do the commercial interests dictate editorial policy of the publication? Or the publisher's
6. Is there periodical hoaxes or sabotage in the publication or publisher?
7. Has the editorial biased?
8. Have the editorials choose the topics and the perspective and slant of the writing?
9. Where does the editorial stand on political issues?
10. What does the table of content and ads use? And what political and cultural biases?
11. Does the scholarly presses and journals have any political or cultural stance?
12. Does the publisher protect and verify the statement they print to protect the reputation?
13. Is this article or book written by scholar? Or the books have been written by amateur or just get attention?
14. Is this book or article written with editing or review by disinterested parties?

Audience

1. Who is the intended audience?
2. Was it sponsored audience?
3. Real audience vs fake audience?
4. Who are the author's intended audience?
5. The book aimed at what audience? Uneducated, educated, experts etc? Is there any other targeted audience?
6. Is the book aimed at the readers far better versed than they are in the topic under study?
7. Is the audience familiar with the issue the author writes?
8. Is this article or book was written by the author to lead to agree with author's point of view?
9. Is the author tries to challenge the readers and the audience?
10. How has the audience Responded?
11. What has been written in response to the author's idea?
12. How the audience reviewed the book and the ideas?
13. Do the reviewers give bad or good mark to push their own agendas?
14. Is the quote from the book considered by scholars to be accurate and fair to the subject?
15. Is the biography or the quotes are based on the rumours and speculations?
16. What type of reputation does the writer has?
17. Do the other authors cite the writer?

Step 44-How To Spot Bad Science

Unless you've studied it, most of us are never taught how to evaluate science or how to parse the good from the bad. Yet it is something that dictates every area of our lives. It is vital for helping us understand how the world works. It might be too much effort and time to appraise research for yourself, however. Often, it can be enough to consult an expert or read a trustworthy source.

But some decisions require us to understand the underlying science. There is no way around it. Many of us hear about scientific developments from news articles and blog posts. Some sources put the work into presenting useful information. Others manipulate or misinterpret results to get more clicks. So we need the thinking tools necessary to know what to listen to and what to ignore. When it comes to important decisions, like knowing what individual action to take to minimize your contribution to climate change or whether to believe the friend who cautions against vaccinating your kids, being able to assess the evidence is vital.

Much of the growing (and concerning) mistrust of scientific authority is based on a misunderstanding of how it works and a lack of awareness of how to evaluate its quality. Science is not some big immovable mass. It is not infallible. It does not pretend to be able to explain everything or to know everything. Furthermore, there is no such thing as "alternative" science. Science does involve mistakes. But we have yet to find a system of inquiry capable of achieving what it does: move us closer and closer to truths that improve our lives and understanding of the universe.

"Rather than love, than money, than fame, give me truth." Henry David Thoreau

There is a difference between bad science and pseudoscience. Bad science is a flawed version of good science, with the potential for improvement. It follows the scientific method, only with errors or biases. Often, it's produced with the best of intentions, just by researchers who are responding to skewed incentives.

Pseudoscience has no basis in the scientific method. It does not attempt to follow standard procedures for gathering evidence. The claims involved may be impossible to disprove. Pseudoscience focuses on finding evidence to confirm it, disregarding disconfirmation. Practitioners invent narratives to preemptively ignore any actual science contradicting their views. It may adopt the appearance of actual science to look more persuasive.

While the tools and pointers in this post are geared towards identifying bad science, they will also help with easily spotting pseudoscience.

Good science is science that adheres to the scientific method, a systematic method of inquiry involving making a hypothesis based on existing knowledge, gathering evidence to test if it is correct, then either disproving or building support for the hypothesis. It takes many repetitions of applying this method to build reasonable support for a hypothesis.

In order for a hypothesis to count as such, there must be evidence that, if collected, would disprove it.

In this post, we'll talk you through two examples of bad science to point out some of the common red flags. Then we'll look at some of the hallmarks of good science you can use to sort the signal from the noise. We'll focus on the type of research you're likely to encounter on a regular basis, including medicine and psychology, rather than areas less likely to be relevant to your everyday life.

[*Note: we will use the terms "research" and "science" and "researcher" and "scientist" interchangeably here.]*

Power Posing

"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom." —Isaac Asimov

First, here's an example of flawed science from psychology: power posing. A 2010 study by Dana Carney, Andy J. Yap, and Amy Cuddy entitled *"*Power Posing: Brief Nonverbal Displays Effects Neuroendocrine Levels and Risk Tolerance" claimed "open, expansive" poses caused participants to experience elevated testosterone levels, reduced cortisol levels, and greater risk tolerance. These are all excellent things in a high-pressure situation, like a job interview. The abstract concluded that "a person can, via a simple two-minute pose, embody power and instantly become more powerful." The idea took off. It spawned hundreds of articles, videos, and tweets espousing the benefits of including a two-minute power pose in your day.

Yet at least eleven follow up studies, many led by Joseph Cesario of Michigan State University including "'Power Poses' Don't Work, Eleven New Studies Suggest," failed to replicate the results. None found that power posing has a measurable impact on people's performance in tasks or on their physiology. While subjects did report a subjective feeling of increased powerfulness, their performance did not differ from subjects who did not strike a power pose.

One of the researchers of the original study, Carney, has since changed her mind about the effect. Carney stated she no longer believe the results of the original study.

Unfortunately, this isn't always how researchers respond when confronted with evidence discrediting their prior work. We all know how uncomfortable changing our minds is.

The notion of power posing is exactly the kind of nugget that spreads fast online. It's simple, free, promises dramatic benefits with minimal effort, and is intuitive. We all know posture is important. It has a catchy, memorable name. Yet examining the details of the original study reveals a whole parade of red flags. The study had 42 participants. That might be reasonable for preliminary or pilot studies. But is in no way sufficient to "prove" anything. It was not blinded. Feedback from participants was self-reported, which is notorious for being biased and inaccurate.

There is also a clear correlation/causation issue. Powerful, dominant animals tend to use expansive body language that exaggerates their size. Humans often do the same. But that doesn't mean it's the pose making them powerful. Being powerful could make them pose that way.

A TED Talk in which Amy Cuddy, the study's co-author, claimed power posing could "significantly change the way your life unfolds" is one of the most popular to date, with tens of millions of views. The presentation of the science in the talk is also suspect. Cuddy makes strong claims with a single, small study as justification. She portrays power posing as a panacea. Likewise, the original study's claim that a power pose makes someone "instantly become more powerful" is suspiciously strong.

This is one of the examples of psychological studies related to small tweaks in our behavior that have not stood up to scrutiny. We're not singling out the power pose study as being unusually flawed or in any way fraudulent. The researchers had clear good intentions and a sincere belief in their work. It's a strong example of why we should go straight to the source if we want to understand research. Coverage elsewhere is unlikely to even mention methodological details or acknowledge any shortcomings. It would ruin the story. We even covered power posing on Farnam Street in 2016—we're all susceptible to taking these 'scientific' results seriously, without checking on the validity of the underlying science.

It is a good idea to be skeptical of research promising anything too dramatic or extreme with minimal effort, especially without substantial evidence. If it seems too good to be true, it most likely is.

Green Coffee Beans

"An expert is a person who has made all the mistakes that can be made in a very narrow field." —Niels Bohr

The world of weight-loss science is one where bad science is rampant. We all know, deep down, that we cannot circumnavigate the need for healthy eating and exercise. Yet the search for a magic bullet, offering results without effort or risks, continues. Let's take a look at one study that is a masterclass in bad science.

Entitled *"*Randomized, Double-Blind, Placebo-Controlled, Linear Dose, Crossover Study to Evaluate the Efficacy and Safety of a Green Coffee Bean Extract in Overweight Subjects," it was published in 2012 in the journal *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy.* On the face of it, and to the untrained eye, the study may appear legitimate, but it is rife with serious problems, as Scott Gavura explained in the article "Dr. Oz and Green Coffee Beans – More Weight Loss Pseudoscience" in the publication *Science-Based Medicine*. The original paper was later retracted by its authors. The Federal Trade Commission (FTC) ordered the supplement manufacturer who funded the study to pay a $3.5 million fine for using it in their marketing materials, describing it as "botched."

The Food and Drug Administration (FDA) recommends studies relating to weight-loss consist of at least 3,000 participants receiving the active medication and at least 1,500 receiving a placebo, all for a minimum period of 12 months. This study used a mere 16 subjects, with no clear selection criteria or explanation. None of the researchers involved had medical experience or had published related research. They did not disclose the conflict of interest inherent in the funding source. It didn't cover efforts to avoid any confounding factors. It is vague about whether subjects changed their diet and exercise, showing inconsistencies. The study was not double-blinded, despite claiming to be. It has not been replicated.

The FTC reported that the study's lead investigator "repeatedly altered the weights and other key measurements of the subjects, changed the length of the trial, and misstated which subjects were taking the placebo or GCA during the trial." A meta-analysis by Rachel Buchanan and Robert D. Beckett, "Green Coffee for Pharmacological Weight Loss" published in the *Journal of Evidence-Based Complementary & Alternative Medicine,* failed to find evidence for green coffee beans being safe or effective; all the available studies had serious methodological flaws, and most did not comply with FDA guidelines.

Signs of Good Science

"That which can be asserted without evidence can be dismissed without evidence." —Christopher Hitchens

We've inverted the problem and considered some of the signs of bad science. Now let's look at some of the indicators a study is likely to be trustworthy. Unfortunately, there is no single sign a piece of research is good science. None of the signs mentioned here are, alone, in any way conclusive. There are caveats and exceptions to all. These are simply factors to evaluate.

It's Published by a Reputable Journal

"The discovery of instances which confirm a theory means very little if we have not tried, and failed, to discover refutations." —Karl Popper

A journal, any journal, publishing a study says little about its quality. Some will publish any research they receive in return for a fee. A few so-called "vanity publishers" claim to have a peer-review process, yet they typically have a short gap between receiving a paper and publishing it. We're talking days or weeks, not the expected months or years. Many predatory publishers do not even make any attempt to verify quality.

No journal is perfect. Even the most respected journals make mistakes and publish low-quality work sometimes. However, anything that is not published research or based on published research in a journal is not worth consideration. Not as science. A blog post saying green smoothies cured someone's eczema is not comparable to a published study. The barrier is too low. If someone cared enough about using a hypothesis or "finding" to improve the world and educate others, they would make the effort to get it published. The system may be imperfect, but reputable researchers will generally make the effort to play within it to get their work noticed and respected.

It's Peer Reviewed

Peer review is a standard process in academic publishing. It's intended as an objective means of assessing the quality and accuracy of new research. Uninvolved researchers with relevant experience evaluate papers before publication. They consider factors like how well it builds upon pre-existing research or if the results are statistically significant. Peer review should be double-blinded. This means the researcher doesn't know who is reviewing their work and the reviewer doesn't know who the researcher is.

Publishers only perform a cursory "desk check" before moving onto peer review. This is to check for major errors, nothing more. They cannot have the expertise necessary to vet the

quality of every paper they handle—hence the need for external experts. The number of reviewers and strictness of the process depends on the journal. Reviewers either declare a paper unpublishable or suggest improvements. It is rare for them to suggest publishing without modifications.

Sometimes several rounds of modifications prove necessary. It can take years for a paper to see the light of day, which is no doubt frustrating for the researcher. But it ensures no or fewer mistakes or weak areas.

Pseudoscientific practitioners will often claim they cannot get their work published because peer reviewers suppress anything contradicting prevailing doctrines. Good researchers know having their work challenged and argued against is positive. It makes them stronger. They don't shy away from it.

Peer review is not a perfect system. Seeing as it involves humans, there is always room for bias and manipulation. In a small field, it may be easy for a reviewer to get past the double-blinding. However, as it stands, peer review seems to be the best available system. In isolation, it's not a guarantee that research is perfect, but it's one factor to consider.

The Researchers Have Relevant Experience and Qualifications

One of the red flags in the green coffee bean study was that the researchers involved had no medical background or experience publishing obesity-related research.

While outsiders can sometimes make important advances, researchers should have relevant qualifications and a history of working in that field. It is too difficult to make scientific advancements without the necessary background knowledge and expertise. If someone cares enough about advancing a given field, they will study it. If it's important, verify their backgrounds.

It's Part of a Larger Body of Work

"Science, my lad, is made up of mistakes, but they are mistakes which it is useful to make, because they lead little by little to the truth." —Jules Verne

We all like to stand behind the maverick. But we should be cautious of doing so when it comes to evaluating the quality of science. On the whole, science does not progress in great leaps. It moves along millimeter by millimeter, gaining evidence in increments. Even if a piece of research is presented as groundbreaking, it has years of work behind it.

Researchers do not work in isolation. Good science is rarely, if ever, the result of one person or even one organization. It comes from a monumental collective effort. So when evaluating research, it is important to see if other studies point to similar results and if it is

an established field of work. For this reason, meta-analyses, which analyze the combined results of many studies on the same topic, are often far more useful to the public than individual studies. Scientists are humans and they all make mistakes. Looking at a collective body of work helps smooth out any problems. Individual studies are valuable in that they further the field as a whole, allowing for the creation of meta-studies.

Science is about evidence, not reputation. Sometimes well-respected researchers, for whatever reason, produce bad science. Sometimes outsiders produce amazing science. What matters is the evidence they have to support it. While an established researcher may have an easier time getting support for their work, the overall community accepts work on merit. When we look to examples of unknowns who made extraordinary discoveries out of the blue, they always had extraordinary evidence for it.

Questioning the existing body of research is not inherently bad science or pseudoscience. Doing so without a remarkable amount of evidence is.

It Doesn't Promise a Panacea or Miraculous Cure

Studies that promise anything a bit too amazing can be suspect. This is more common in media reporting of science or in research used for advertising.

In medicine, a panacea is something that can supposedly solve all, or many, health problems. These claims are rarely substantiated by anything even resembling evidence. The more outlandish the claim, the less likely it is to be true. Occam's razor teaches us that the simplest explanation with the fewest inherent assumptions is most likely to be true. This is a useful heuristic for evaluating potential magic bullets.

It Avoids or at Least Discloses Potential Conflicts of Interest

A conflict of interest is anything that incentivizes producing a particular result. It distorts the pursuit of truth. A government study into the health risks of recreational drug use will be biased towards finding evidence of negative risks. A study of the benefits of breakfast cereal funded by a cereal company will be biased towards finding plenty of benefits. Researchers do have to get funding from somewhere, so this does not automatically make a study bad science. But research without conflicts of interest is more likely to be good science. High-quality journals require researchers to disclose any potential conflicts of interest. But not all journals do. Media coverage of research may not mention this (another reason to go straight to the source). And people do sometimes lie. We don't always know how unconscious biases influence us.

It Doesn't Claim to Prove Anything Based on a Single Study

In the vast majority of cases, a single study is a starting point, not proof of anything. The results could be random chance, or the result of bias, or even outright fraud. Only once other researchers replicate the results can we consider a study persuasive. The more replications, the more reliable the results are. If attempts at replication fail, this can be a sign the original research was biased or incorrect.

A note on anecdotes: they're not science. Anecdotes, especially from people close to us or those who have a lot of letters behind their name, have a disproportionate clout. But hearing something from one person, no matter how persuasive, should not be enough to discredit published research. Science is about evidence, not proof. And evidence can always be discredited.

It Uses a Reasonable, Representative Sample Size

A representative sample represents the wider population, not one segment of it. If it does not, then the results may only be relevant for people in that demographic, not everyone. Bad science will often also use very small sample sizes.

There is no set target for what makes a large enough sample size; it all depends on the nature of the research. In general, the larger, the better. The exception is in studies that may put subjects at risk, which use the smallest possible sample to achieve usable results.

In areas like nutrition and medicine, it's also important for a study to last a long time. A study looking at the impact of a supplement on blood pressure over a week is far less useful than one over a decade. Long-term data smooths out fluctuations and offers a more comprehensive picture.

The Results Are Statistically Significant

Statistical significance refers to the likelihood, measured in a percentage, that the results of a study were not due to pure random chance. The threshold for statistical significance varies between fields. Check if the confidence interval is in the accepted range. If it's not, it's not worth paying attention to.

It Is Well Presented and Formatted

"When my information changes, I alter my conclusions. What do you do, sir?" —John Maynard Keynes

As basic as it sounds, we can expect good science to be well presented and carefully formatted, without prominent typos or sloppy graphics.

It's not that bad presentation makes something bad science. It's more the case that researchers producing good science have an incentive to make it look good. As Michael J. I. Brown of Monash University explains in How to Quickly Spot Dodgy Science, this is far more than a matter of aesthetics. The way a paper looks can be a useful heuristic for assessing its quality. Researchers who are dedicated to producing good science can spend years on a study, fretting over its results and investing in gaining support from the scientific community. This means they are less likely to present work looking bad. Brown gives an example of looking at an astrophysics paper and seeing blurry graphs and misplaced image captions—then finding more serious methodological issues upon closer examination. In addition to other factors, sloppy formatting can sometimes be a red flag. At the minimum, a thorough peer-review process should eliminate glaring errors.

It Uses Control Groups and Double-Blinding

A control group serves as a point of comparison in a study. The control group should be people as similar as possible to the experimental group, except they're not subject to whatever is being tested. The control group may also receive a placebo to see how the outcome compares.

Blinding refers to the practice of obscuring which group participants are in. For a single-blind experiment, the participants do not know if they are in the control or the experimental group. In a double-blind experiment, neither the participants nor the researchers know. This is the gold standard and is essential for trustworthy results in many types of research. If people know which group they are in, the results are not trustworthy. If researchers know, they may (unintentionally or not) nudge participants towards the outcomes they want or expect. So a double-blind study with a control group is far more likely to be good science than one without.

It Doesn't Confuse Correlation and Causation

In the simplest terms, two things are correlated if they happen at the same time. Causation is when one thing causes another thing to happen. For example, one large-scale study entitled "Are Non-Smokers Smarter than Smokers?" found that people who smoke tobacco tend to have lower IQs than those who don't. Does this mean smoking lowers your IQ? It might, but there is also a strong link between socio-economic status and smoking. People of low income are, on average, likely to have lower IQ than those with higher incomes due to factors like worse nutrition, less access to education, and sleep deprivation. A study by the Centers for Disease Control and Prevention entitled "Cigarette Smoking and Tobacco

Use Among People of Low Socioeconomic Status," people of low socio-economic status are also more likely to smoke and to do so from a young age. There might be a correlation between smoking and IQ, but that doesn't mean causation.

Disentangling correlation and causation can be difficult, but good science will take this into account and may detail potential confounding factors of efforts made to avoid them.

Conclusion

"The scientist is not a person who gives the right answers, he's one who asks the right questions." —Claude Lévi-Strauss

The points raised in this article are all aimed at the linchpin of the scientific method—we cannot necessarily prove anything; we must consider the most likely outcome given the information we have. Bad science is generated by those who are willfully ignorant or are so focused on trying to "prove" their hypotheses that they fudge results and cherry-pick to shape their data to their biases. The problem with this approach is that it transforms what could be empirical and scientific into something subjective and ideological.

When we look to disprove what we know, we are able to approach the world with a more flexible way of thinking. If we are unable to defend what we know with reproducible evidence, we may need to reconsider our ideas and adjust our worldviews accordingly. Only then can we properly learn and begin to make forward steps. Through this lens, bad science and pseudoscience are simply the intellectual equivalent of treading water, or even sinking.

Article Summary

- Most of us are never taught how to evaluate science or how to parse the good from the bad. Yet it is something that dictates every area of our lives.
- Bad science is a flawed version of good science, with the potential for improvement. It follows the scientific method, only with errors or biases.
- Pseudoscience has no basis in the scientific method. It does not attempt to follow standard procedures for gathering evidence. The claims involved may be impossible to disprove.
- Good science is science that adheres to the scientific method, a systematic method of inquiry involving making a hypothesis based on existing knowledge, gathering evidence to test if it is correct, then either disproving or building support for the hypothesis.
- Science is about evidence, not proof. And evidence can always be discredited.
- In science, if it seems too good to be true, it most likely is.

Signs of good science include:

- It’s Published by a Reputable Journal
- It’s Peer Reviewed
- The Researchers Have Relevant Experience and Qualifications
- It’s Part of a Larger Body of Work
- It Doesn’t Promise a Panacea or Miraculous Cure
- It Avoids or at Least Discloses Potential Conflicts of Interest
- It Doesn’t Claim to Prove Anything Based on a Single Study
- It Uses a Reasonable, Representative Sample Size
- The Results Are Statistically Significant
- It Is Well Presented and Formatted
- It Uses Control Groups and Double-Blinding
- It Doesn’t Confuse Correlation and Causation

Step 45-Content Of Critical Review

Content of Critical Review

1. The researcher needs to evaluate the research that has already been undertaken in the area of your research project,
2. Show and explain the relationship between published research findings and reference the literature in which they were reported.
3. Your review will also enable the readers to see your ideas against the background of previous published research in the area.
4. The researcher needs to be highly critical of the earlier research reported in the literature. If you want to be highly.
5. Critical the research must review the literature, explain clearly why it is problematic, and justify your own idea.
6. Considering content of critical review, the research need
    A. To include the key academic theories within chosen area of research.
    B. To demonstrate that your knowledge of chosen area is up to date.
    C. Through clear referencing, enable those reading your project report to find the original publications which you cite.
    D. The research needs to avoid plagiarism.
7. Have you ensured that the literature covered relates clearly to your research question?
8. Have you covered the most relevant and significant theories of recognised experts in the area?
9. Have you covered the most relevant and significant literature or at least a representative sample?
10. Have you included up to date literature?
11. Have you referenced all the literature used in the format prescribed in the assessment criteria?
12. What is really meant by being critical about the content
13. There are 5 aspects of critical approach that should e fostered by researcher:
    A. Critique of rhetoric-this means appraising or evaluating a problem with effective use of language. In the context of your critical literature review, this emphasises the need for you, as the reviewer to use your skills both of making reasoned judgements and of arguing effectively in writing.
    B. Critique of tradition.

C. Critique of authority.
D. Critique of objectivity.

14. Questioning everything you read, and be sceptic. This means you need to be consistently considering and justifying with clear arguments your own critical stance.
15. Part of the researcher judgement will inevitably mean being able to identify the most relevant and significant theories and recognised experts highlighted.
16. The researcher needs to:
    A. Refer to and assess research by recognised experts in chosen area.
    B. Consider and discuss research that supports and research that opposes the idea.
    C. Make reasoned judgement regarding the value of others' research, showing clearly how it related to the topic of the research.
    D. Justify the arguments with valid evidence in a logical manner.
    E. Distinguish clearly between facts and opinions.
17. The researcher needs to read widely on the research topic and have good knowledge and understanding of literature.
18. The researcher needs to comment on merits and faults of key literature within the chosen area.
19. Have you shown how your research question related to previous research reviewed?
20. Have you assessed the strengths and weaknesses of the previous researched reviewed?
21. Have you been objective in your discussion and assessment of another people's research?
22. Have you included referenced to research that is counter to your own opinion?
23. Have you distinguished clearly between facts and opinions?
24. Have you make reasoned judgement about the value and relevance of others' research to your own?
25. Have you justified clearly your own ideas?
26. Have you highlighted those areas where new research (yours) is needed to provide fresh insights and taken these into account in your arguments? In particular:
    A. Where there are inconsistencies in current knowledge and understanding?
    B. Where there are omissions or bias in published research?
    C. Where research findings need to be tested further?
    D. Where evidence is lacking, inconclusive contradictory or limited?
27. Have you justified your arguments by referencing correctly published research?

Step 46- The Funding of Book, Author, Publisher, Speaker, Presenter, School, Government, Politician, Companies, Influencer, Newspaper, Journalist or Other Person.

Rule 0- Listen and Follow The Books in The Following Folders:

1. **Archeology Folder**
2. **Atlas Folder**
3. **Concordance Folder**
4. **Cultural practice Folder**
5. **Dictionary Folder**
6. **Discourse Analysis Folder**
7. **Encyclopedia Folder**
8. **Fake News Folder**
9. **Figure of Speech Folder**
10. **Geography Folder**
11. **Handbook Folder**
12. **Introduction to Old and New Testament Folder**
13. **Legal analysis Folder**
14. **Literature Review Folder**
15. **Mathematics Folder**
16. **Military and War Folder**
17. **Politics Folder**
18. **Probability and Statistics Folder**
19. **Religious Customs Folders**

20. Rhetorical Review Folder

21. Statistics Folder

22. Survey of Old and New Testament Folder

23. Symbols folder

24. Systematic Theology Folder

Rule 1-Sponsor and Follow the money.

1. Who is the sponsor?
2. Watch What Sponsors Do and Not What they talk.
3. Who gave the funds? One person or group of people?
4. Why are they have been sponsored?
5. How much were they sponsored?
6. Almost at the end ask questions about the funds provided to the author, presenter, researcher, speaker, publisher and find out about the source of the funds provided. This is the outside research needs to be done. Follow the money
7. Who funded this whole scheme and situation?
8. Where the funds came from?
9. Where the funds where? Who received the funds?
10. Were these funds for influencing?
11. Were these funds for political reason?
12. Where these funds for legal reason?
13. Where these funds for lobbyism?
14. Does this type of funding influence research?
15. Follow the money and funding.
16. Research who is behind the funding; name, companies, politicians etc.
17. Who paid for this situation to occur?
18. Who sponsored this event. Situation? Show the diagram.
19. How much was it paid to the people for this event?
20. How did they paid this? Was it directly, indirectly or off shore companies, companies, charity, charity groups, other groups, people from the company?
21. What currency was it paid?
22. What other reward was at stake for these people? New job, some incentive?
23. Make a line of web who I sponsoring and who is gaining?
24. How these people related to the lobbyist or sponsor?
25. Was it use different?
26. How did the transaction happened?
27. What has been used to sponsor those people?
28. What did they do with the funds?
29. What people incentives were?

Rule 2-Corruption and follow the money

1. What are the corruption scheme in this situation/government, company, person or group of people?
2. Ask for the full names, job titles and locations of:
3. The persons who solicited or received the bribe and the persons or companies that paid the bribe, or offered to do so.
4. Any agents, middlemen and subcontractors involved in the payments.
5. Try to get as many details as possible of the alleged bribes, including:
6. How much money was involved in the bribe payments and the overall transactions?
7. What the bribe payments were for, for example, to be selected, to get a contract amendment, to be paid promptly, etc.?
8. How the payments were made – by cash, wire transfer or check, or in the form of goods or services – and how the payments were recorded – for example, as a "consulting fee" or commission or miscellaneous expenses. Ask who was involved in these transactions.
9. Try to identify the account (or at least the bank) or source of funds from which the payments were made, and the bank or accounts to which they were made.
10. Ask about documentation of the bribe payments and the evidence corrupt influence. This could include, of course, bank account records, wire transfer receipts, or false invoices and receipts to disguise the payments. Evidence of corrupt influence could include documentation showing inflated pricing, acceptance of poor quality work, approval of unnecessary change orders, etc. Ask who has the records and where are they? Request copies. Ask for emails or other communications regarding the scheme.
11. Get the names and location of other persons who might know of the scheme, such as former employees or competitors of the bribe payer (who also might have been approached for bribes), associates or subordinates of the bribe taker.

Rule 3-Legal VS Illegal Schemes

1. What are the corruption diagrams in this situation by government, company, person or group of people?
2. Was this legal scheme?
3. Was there any hidden in the accounting? What was hidde? What was tried to be hidden? Why was hidden?
4. What scheme did they use regarding funding?
5. Was this legal?

6. What are the schemes? Legal vs illegal? What are the evidence or proof?
7. Does this violated any law or regulations? Constitution, tax, finance economic, legal or other regulations?
8. What are the names who involved in this scheme:
    A. Names
    B. Addresses
    C. Company names
    D. Charity
    E. Group names
    F. Government agencies
    G. Regulation agencies
    H. Government bodies
    I. Name in the government
9. How did the corruption occurred.
10. What is corruption?
11. Which countries are the most corrupt?
12. What are the common characteristics of countries with high corruption?
13. What is the magnitude of corruption? (5) Do higher wages for bureaucrats reduce corruption?
14. Can competition reduce corruption?
15. Why have there been so few (recent) successful attempts to fight corruption?
16. Does corruption adversely affect growth?
17. Do you know or suspect, or have you heard, that kickbacks are being paid?
18. Questions to identify parties and potential witnesses include:
    - Please identify all persons and organizations that might be involved in suspect transactions, including all:
        I. Contractors
        II. Subcontractors
        III. Suppliers
        IV. Agents or middlemen
        V. Project or government officials
19. Have any bidders filed protests or complaints or voiced suspicions?
20. Are any unnecessary or questionable agents or middlemen involved in any contracts?
21. Are any agents or middlemen paid unreasonably high fees?

22. Do any project or government officials refer contractors to certain suppliers, subcontractors or agents?
23. Questions about selection and performance include:
    - Are questionable selection methods, e.g., unjustified sole source awards, employed?
    - Do any contractors charge unreasonably high prices, which are accepted by project or government officials?
    - Do any contractors receive an unusually high volume of contracts?
    - Is the quality of any contractor's work consistently unsatisfactory, but accepted by project or government officials?
    - Do any contractors consistently miss delivery or completion dates without penalty?
    - Do any contractors receive questionable, or an unusually high number of, change orders?
24. Questions about the behavior of the project or government officials include:
    - Do any project or government officials:
        I. Give favorable treatment to certain contractors?
        II. Routinely ignore or excuse poor or late service by particular contractors?
        III. Have an unusual interest in the selection or success of a particular contractor, or in a particular contract?
        IV. Take any actions with regard to certain contractors, or contracts, that are outside, or below, their normal duties?
        V. Routinely ignore standard policy and procedure to benefit a certain contractor?
25. Questions about the relationship between parties include:
        - Is there close socialization or a "less than arm's length relationship" between any contractor and project or government officials?
    - Do any project or government officials:
        I. Accept inappropriate gifts, travel or entertainment from any contractors?
        II. Display new or unexplained wealth?
        III. Appear to have financial problems?
        IV. Officials have outside business interests or companies?
    - Have all project and government officials filed required conflict of interest and financial disclosure forms?

26. Questions about contract documentation include:
    - Do any contractors submit inflated or questionable invoices, or fail to provide adequate documentation for them?
    - Do any project or government officials routinely ignore or tolerate the submission of inadequate documentation by certain contractors?
    - Are change order requests and payments adequately documented for all contractors?
    - Are controls and procedures to prevent bribes and kickbacks in place and enforced?

Rule 4-Conflict of Interest

1. Was there Conflict of interest?
2. How does the Conflict of Interest occur?
3. How do we know that Conflict of Interest Occurred?

Rule 4-Trust of the Source

1. Where did the data has been found?
2. Can I trust sources of the information?

Rule 5-Who is interesting in the situation

1. Watch What They Do and Not What they talk.
2. Deep State, Who is in the deep state: Names, Ages, What are their position, Where did they study, Who are they studied with, who are their parents. Where they lived.
3. Who are the Shadow People or person who controls everything in government? Names, Ages, What are their position, Where did they study, Who are they studied with? who are their parents. Where they lived.
4. Who is the CEO, CFO, Risk managers, Board of Directors, Shareholders, stakeholders of the company, Organisation? Names, Ages, What are their position, Where did they study, Who are they studied with? who are their parents. Where they lived
5. Who are the shadow CEO, CFO, Risk manager, Board of Directors, shareholders, stakeholders of the company, organisation: Names, Ages, What are their position, Where did they study, Who are they studied with, who are their parents. Where they lived.
6. Who has interest in this situation?
7. Who is the interested group or party? Do the diagram of how they are related to this situation and how they would gain out of this situation?
8. Who lobbying this?
9. Who is the person/organisation or group that this situation is the most useful?
10. Who is the person/organisation or group that this situation is least useful?
11. Did the author used all AVAILABLE SOURCES, INFORMATION, FACTS AND ARGUMENTS TO HIM/HER?
12. Does the author trying to rewrite facts, information, history of the subject to fit his/her arguments and situation?
13. Did the author do honest analysis of all available sources, information, arguments, evidence and facts?
14. Whom this situation is the most useful?
15. Whom this situation is the least useful?
16. What Capital Group is winner in this situation?
17. What Capital Group is Loser in this situation?
18. Who is the winner of this situation?
19. Who is the loser of this situation?
20. Who is the victim in this situation?
21. Who is not the victim in this situation?
22. Who is the most likely used this situation to his/her/their advantage?

23. Who is the least likely used this situation to his/her/their advantage?
24. Who got harm in this situation?
25. Who did not get harm in this situation?
26. Almost at the end ask questions about the funds provided to the author, presenter, researcher, speaker, publisher and find out about the source of the funds provided. This is the outside research needs to be done. Follow the money
27. Who or what is the most influenced in this situation?
28. What are the corruption scheme in this situation/government, company, person or group of people?
29. What are the corruption diagrams in this situation by government, company, person or group of people?
30. Who is at fault in this situation?
31. Who is not at fault in this situation?
32. Who funded this whole scheme and situation?
33. Where the funds came from?
34. Where the funds where? Who received the funds?
35. Was this legal scheme?
36. Is the current situation or crisis or breaking news is there to cover something bigger behind? Like trying to pass new laws or corruption or purchase which are illegal. What are these things that been tried to hid behind big news. Research everything?
37. Who losing the most in this situation?
38. Who is losing least in this situation?
39. Who is winning the most in this situation
40. Who is the winning least in this situation?
41. Does the person tried to incorrectly paraphrase the arguments or facts or evidence?
42. Is there conflict of interest between these two parties?
43. Who is the breaking conflict of interest?
44. Was there are any Break a law, code of, GDPR?
45. Was there any hidden in the accounting? What was hidden? What was tried to be hidden? Why was hidden?
46. What or who the person tried to protect?
47. Was there any motivation behind some of the actions?
48. What was the motivation behind these actions?
49. What are the mathematical formulas behind?

50. What are the flow chart of decision. What would be outcome if they would decide one way or the other?
51. Was the person who speaking, presenting, author, researcher representing other side correctly and honestly?
52. Was the speaker, presenter, author and researcher were paid by somebody to do the propaganda and throw the dirt on other people?
53. Was there any propaganda used in the speech, research, book or article so that they/ he/ she advising about other side incorrectly?
54. Did I use evidence, facts and sources for every argument, premise, conclusion and sentence?
55. Did the other side used sources, facts, evidence for every sentence, premise, argument and conclusion?
56. Did the analogies are correct?
57. Did the analogies really represent other side or my side?
58. What type of arguments presented by other side?
59. Was other side used epithets about other side? Was this is logical fallacy? Did I use the epithets? Did the other side understand this epithets? Why did they think this was appropriate way or time to say this? Was this what other person think? Was this objectively true or not? Was this breaking any law?
60. Does the other side understand the definition of this term?
61. Was this is a troll who is not looking to get the correct information, but troll others and me?
62. Is this person looking appropriate discussion?
63. Is this person trying to persuade you appropriately with full information which is correct or incorrect?
64. Would you apologise if provided facts and evidence were wrong for the arguments which were lead to wrong conclusion?
65. Does the person know or understand that he/she/they are wrong or right?
66. Why they they think they are right?
67. Why they think they are wrong?
68. How do we know that this happened exactly the way he said? Do we have facts? Evidence?
69. Use **What, who, why, when, where, how, do , did, can, may do not, did not, cannot may not, might, might not, does, does not.**
70. Does the person has the education to speak about this subject.

71. Does the person has honestly went through the criticism of the opposing ideas? Did the person found the reason he opposing to the other person?
72. Does the person have serious intention to confuse audience?
73. How well does the person do the job to confuse the audience?
74. Did the person introduced new terms or arguments.
75. Did the other person did a good job to research his her ideas and opposing person ideas?
76. What is the reason the person trying to confuse audience?
77. What propaganda tools did the author, speaker, writer used in analysing this idea and opposing person idea?
78. Did the person understood or understand that he used propaganda tools.
79. What sources did the other person used in analysing opposing person arguments?

Rule 6-Complaint

1. The full names, job titles and contact information for all persons and organizations allegedly involved.
2. The details (who, what, when, where, why and how much) of the allegations.
3. The dates or time period of the key events.
4. How much money or losses are involved.
5. Are there any records or documents that support the allegations? If so, what and who has them? Ask for electronic and paper copies.
6. The names, location and contact information of other persons who might know of the wrongdoing and be willing to discuss it.
7. Are there other similar transactions? If so, get the details, and find out who knows about them.
8. How does the complainant know about the allegations? If from other persons, who and where are they?
9. Is the scheme currently on-going? If so, do the subject(s) know of the complainant's report? (This helps to determine whether a covert investigation would be feasible.)
10. Will the complainant agree to testify or sign a statement? (Many will not, but their information is still useful to identify leads, documents and other witnesses who will testify. Assure the witness that he or she will not be compelled to testify if unwilling to do so.)
11. What is the complainant's motive to report? (In most cases, the complainant's motive is not as important as his or her credibility.)
12. Try to determine if there is any reason to suspect the complainant's credibility, such as a personal interest in the transactions, a history of disputes between the parties or a criminal record.

Rule 7-Power in Society

1. Who has the power in society?
2. Watch What Sponsors Do and Not What they talk.
3. List of the groups, companies government who has the power in society?
4. Why do I think this group has the power in the society?
5. Who is the shadow controlling?
6. Who is shadow government?
7. Who is in the control behind?
8. Make a list of the groups who control behind?
9. Why do I think this group is in control?

Rule 8-Why author choose these facts

1. Why the author choose these facts?
2. Why author choose these figures?
3. Why author choose these evidences?
4. Does these facts or facts or evidence make stronger the argument or weaken?

Rule 9-Rewrite History

1. Does the author, presenter, speaker tries to rewrite the history or story?
2. Why does the author, presenter, speaker tries to rewrite the history or story?
3. What facts does the author hides or suppress to rewrite the history?
4. What is the reason of the author, presenter, speaker tries to rewrite the history or story?

Rule 10-Dividing groups into smaller groups

1. Does the author, presenter, speaker tried to divide the nation or the group into different groups? What are the groups the author, presenter or speaker tries to divide the people? Make a list
2. How is the author, presenter and speaker tries to divide the group of people?
3. Does the author tries to set up each group against each other? Why do the author tries to set up two groups against each other?
4. Does the author or presenter or speaker tries to segregate the people? Into what groups does the author, speaker, presenter tries to segregate the people into?

5. What is the reason does the author, presenter or speaker tries to divide and segregate people into? Is there any motivation?

Rule 11-Affiliating with Political party

1. Does the presenter or speaker or author affiliate to one of the political party? What party does the author, speaker presenter belongs to?
2. Why is the author belongs to the party?
3. Why is the author not belong to the party?

Rule 12-Affiliating with organisation

1. Does the author, presenter or speaker belongs to the organisation? What organisation does the author, presenter or speaker belongs to?
2. What does the organisation doing? How they try to influence the world?

Rule 13-Influence the world

1. Does the author, presenter, speaker tries to influence the world?
2. How does the author , presenter, speaker tries to influence the world?
3. What way does the author, presenter, speaker tries to influence the world?
4. Why does the author, presenter, speaker tries to influence the world? To gain political, military, financial power? What other power does the author, presenter, speaker tries to gain?

Rule 13-Does the author tries to provoke?

1. Does the author, speaker, presenter tries to provoke some sort of disruption?
2. Why are the reason of this provoked disruption?

Rule 15-Influence with mass media

1. Does the shadow government tries to influence people through the mass media?
2. Who is sponsoring mass media?
3. How they are trying to influence through mass media?
4. What reforms does the shadow government tries to pass in order to satisfy shadow government

Rule 16-Destroy

1. Is anybody tries to destroy the foundation of the following:
    - Government
    - Mass media
    - Family
    - Nation
    - Institution
    - Education
    - Moral
    - Ethics
    - Etc
2. Who are trying to destroy the foundation?
3. Why are they trying?
4. How are they trying?
5. What are they doing to destroy?

Rule 17-Ethical vs Unethical Manner

1. Did the author used the details in ethical manner?
2. Did the author or presenter used the research in ethical manner?
3. Was there unethical behaviour with the research and the sources?

Rule 18-Impact Others

1. How does this situation impact others?
2. How does the speech, writing, presentation impact others?
3. Why is this impact others?
4. What are the reasons that this would or is impacting others?
5. Global impact of the author, presenter, speaker, writer, situation to other.
6. Geopolitical impact analysis.
7. Why is this impact on the other people.
8. Who will this be impacted?
9. How this research impact others?
10. Make a list who will be impacted
11. Make a mind map how they will be impacted.

Rule 19-Lie

1. Where does the author, researcher, writer, presenter and speaker lying ?
2. Is this intentional lying or accidental?
3. Who this lie will impact?
4. What this lie impact?
5. What are the reason of this lie?
6. Why do I think this is lie?

Rule 20-Information and knowledge Fit

1. How this piece in the world of knowledge?
2. How this will impact the world and other people?
3. How does the information fit with each other?
4. How does the information relation with each other?
5. How does the information fit with each other in the world.
6. How does the information relation with each other in the world?

Rule 21-Interested party and groups in Narrative

1. What interested party has the most interest in this narrative??
2. What interested party has the least interest in this narrative?
3. What interest party controls this narrative?
4. Is this narrative based on truth or lie?
5. Why is this narrative is based on truth?
6. Why is this narrative is based on Lie?
7. Why author, speaker, researcher, journalist, presenter lying to the audience?
8. Why author, speaker, researcher, journalist, presenter telling truth to the audience?
9. What is the reason of this lie?
10. What is the reason of this truth?
11. What narrative does the author, researcher, speaker, journalist, presenter trying to push? Why is this? What is the reason?
12. What narrative does the author, researcher speaker, journalist, presenter tries to represent? What is the reason? Why?
13. Is this narrative has strategic point, target? Why?
14. Why does the author says the truth? What is it up to? Is this strategic decision to tell a truth? Does the author tries to do moral, ethical or strategic? Is this selective or not?

15. Why does the author says the Lie? What is it up to? Is this strategic decision to tell a Lie? Does the author tries to do moral, ethical or strategic? Is this selective or not?
16. What group or interested party does the author represent? What is the reason and why?
17. What worldview does the author, researcher, speaker, journalist, present trying to create with this lie or truth?
18. What are they trying to achieve with this lied or truthful narrative?
19. What are they trying to achieve by lie or truth? What end of result they are trying to achieve?
20. Has the author, representer, presenter, researcher, speaker trying to wash out themselves by using lie or truth?
21. Does the author, representative, presenter, researcher, speaker tries to wash out the interested group or party by showing how good is this party is?
22. Does the author use selective narrative in representation of the worldview?
23. Make a list of following”
    I. How many truth statements made
    II. How many truth facts made
    III. How many lie statements made
    IV. How many lie facts made
    V. What conclusion can we make out of this

Rule 22-Tools author, presenter, writer, researcher, speaker representative used

1. Why do the author, presenter, researcher, speaker, representative use emotional tools to persuade audience? What emotional tools used?
2. Why do the author, presenter, researcher, speaker, representative use psychological tools to persuade audience? What tools do they use?
3. What are the performing arts tools?
4. What are the visual arts tools?
5. What are history tools?
6. What are language tools
7. What are linguistic and literature tools?
8. What are Law tools?
9. What are philosophy tools?
10. What are theology tools?
11. What are anthropology tools?
12. What are archeology tools?
13. What are economical tools?
14. what are geography tools?
15. What are political science tools?
16. What are psychology tools?
17. What are sociology tools?
18. What are social work tools?
19. What are biology tools?
20. What are chemistry tools?
21. What are earth science tools?
22. What are space science tools?
23. What are physics tools?
24. What are computer science tools?
25. What are mathematics tools?
26. What are agriculture tools?
27. What are architecture and design tools?
28. What are business tools?
29. What are divinity tools?
30. What are education tools?
31. What are engineering tools?

32. What are technological tools?
33. What are environmental and forestry tools?
34. What are family and consumer science tools?
35. What are human physical performance and recreation tools?
36. What are journalism tools?
37. What are media studies and communication tools?
38. What are library and museum studies?
39. What are medicine and health tools?
40. What are military science tools?
41. What are public administration tools?
42. What are social work tools?
43. What are transportation tools?
44. What are financial tools?
45. What are managerial tools?
46. What are the accounting tools?
47. What are financial advisor tools?
48. What are the financial analyst tools?

Rule 23-Did the author, writer, representative, speaker, researcher talked with both sides?

1. Follow the money.
2. History Tends to repeat. Always try to understand historical facts and build on that understanding of the history.
3. Do not fear objective facts and evidence, even if the facts goes against your arguments, which then you drop if goes against the facts. This helps to understand the context, narrative and see who is manipulating those facts and lying. This helps to understand how the world works and how different things has happened and what history tells you overall. When you know the truth it helps to move on. The truth shall set you free. Always investigate both sides and try to understand their facts, arguments, evidence, who is lying, manipulating, why they do this, who is behind this, what is their purpose, what are they gain from this. Check people background, family history. Do the research always yourself, listen both sides and see the objective facts, how they presenting, why they presenting. Never manipulate information, facts, evidence, and Numbers.
4. Watch What They Do and Not What they talk.
5. Do the diagram how it relates to each other
6. Why has author, presenter, researcher, speaker, representative decide to take this topic or theme to analyse, investigate, talk, write, report, present?
7. Does the author is related to one of the side? Does the author will take one side or both sides to analyse the situation?
8. Does the author talk to one side or both sides to analyse the situation?
9. Does the author, presenter, researcher, speaker, representative do this investigation to push agenda, narrative or story to one side or the other? Is the author objectively allow both sides to speak and present both sides of the story to get full picture?
10. Does the author, presenter, researcher, speaker, representative try to deceive audience? What method does she, he use to deceive?
11. Is the author, presenter, researcher, speaker, representative selective or being selective in:
    I. Presenting sides
    II. Presenting facts
    III. Presenting Historical Facts
    IV. Presenting evidence
    V. Presenting argument.

Rule 24-Did the author, writer, representative, speaker, researcher selective and non selective information of the story?

1. Why is the author, presenter, researcher, speaker, representative is so selective or non-selective in the story?
2. Does the author, presenter, researcher, speaker, representative use propaganda in this investigation?
3. Does the author, presenter, researcher, speaker, representative break law in this investigation?
4. Does the author, presenter, researcher, speaker, representative tries to make:
    I. Emotional conclusion
    II. Deceiving conclusion
    III. Not fully informative conclusion
    IV. Informative conclusion
    V. Truthful conclusion
    VI. Brainwashed conclusion
    VII. Propoganda conclusion
    VIII. Selective conclusion
    IX. Realistic conclusion
    X. Wrong conclusion

Rule 25-Did the author, writer, representative, speaker, researcher manipulating information?

1. Who id manipulating information?
2. Who is manipulating facts?
3. Who is manipulating people to behave one way or the other?
4. Who is manipulating people do this is sort of things?
5. By changing the law, whom this will be most useful and valued?
6. What interested group this will be most useful and whom this will be least useful and valued?
7. By introducing new tax or add more tax and citizens needs to pay more for tax, whom this tax reform or add tax is most useful or valued?
8. Who would win in this situation?
9. What interested group this tax reform is least useful? Who will loose in this situation? What interested group this tax is least valued?
10. What interest group this politician, scientist, author, speaker, government official, military official or other group of people represent?
11. How much does get for this representation? Any gift, money other type of reward?
12. Is this politician, scientist, military official, government official or other group of people corrupt? Why do I think he, she corrupt? Why do I think he, she is not corrupt? What are the facts, evidence and arguments
13. When presented the story or narrative or article or research, does one side:
    I. Make deceitful comments about other side? Does one side misrepresent the other side? Does both side provide full truthful, deceitful information? What was deceitful, truthful
    II. What signs show that they told truth, deceive.
    III. Facts
    IV. Dates
    V. Body language
    VI. Eyes
    VII. The way they said
    VIII. Emotions
    IX. Behavior

Rule 26-Did the author, writer, representative, speaker, researcher representing interested party or group

1. What interested party does the writer, author, researcher, speaker, representative represent
2. Does this conflict of interest?
    I. Does the author, writer, researcher, speaker representative presents both sides?
    II. Why they represent this specific interested party or group
    III. Do they get paid?
    IV. Who financed?
    V. What figure or people behind this
    VI. Follow the money?
    VII. Follow the people or main player or figure behind the money
3. Follow power and the main figure or player behind all of this power? Why are they in-charge?
4. What is their end place or target and what is their end result?
5. Why are they going there?
6. What is the reason?
7. What is their psychological portrait?
8. What psychological issues do they have?

Rule 27-Who is behind the Chaos?

1. Who sponsor-what amount?
2. Why they sponsor?
3. Who are interested party or groups
4. Who are the main figure behind sponsoring?
5. Who are the minor figure behind sponsoring
6. Who are the main and minor figures in the group?
7. What end result do the sponsor wants?
8. What end result do the group wants?
9. Why is this end result?
10. Who behind those people?
11. Who is the shot caller
12. Is this group organised or not?
13. Who is the people power?
14. Do they want more power?
15. Do they do for the power grab?
16. Are they for money, power or both or good cause or greed?
17. What is in their heart
18. What is the main problem? Is it sin and depravity?

Rule 27a-Who is Shadow Government Like, Blackrock, Vanguard, State Street, other Banks, Asset Management etc?

Rule 27b-Who is the shadow person?

Rule 28-Deceiving, truth and Lie

1. Does the author, researcher, speaker, writer, representative intentionally or unintentionally deceiving the author?
    I. What is up to author, researcher, speaker, writer, representative and what does she, he receives?
    II. What does she, he received? Money or other reward?
    III. Does the author, researcher, speaker, writer, representative receives some smaller sentence?
    IV. Does she, he believes what himself, herself saying?
    V. Does the author, researcher, speaker, writer, representative says because of reward?
    VI. Is thus the best what author can provide? In regard facts, arguments, dates, people, other information?
2. How do we know that this is true or lie? Based on what?
3. Do we have witness?
4. Do the witness tell a lie?
5. Do the witness tell a truth?
6. How do we know that the witness tell the truth or lie? What are evidence of lie or truth?
7. What is the reason of lie or truth?
8. What do they gain or loose by tell truth or lie?
9. Does the witness use selective info to present? Why does the witness do?
10. Does author, writer, researcher, speaker representative use selective information to present the argument case for? What info does the author did not include which would reduce strength of argument or case?
11. Does the author represent on side? Why? What are reason does the author suppress other side?
12. Does the author represent both sides equally? Why? What reason? If not, why not?

Rule 29-Definition change

1. Was there definition changed to fit the narrative of corporation, group of interested people, government, elite or somebody else?
2. When was changed?
3. Was there theory changed to fit narrative corporation, group of interested people, government, elite or somebody else?

Rule 30-Interested groups

1. How this information being used by newspaper, interested groups, oligarchs and other groups of people
2. What information is being useful for idealogical, religious, political, cultural, financial or other agenda?
3. Is this information is pressure to censor freedom of speech, movement one or the other groups?
4. Who funded this person, newspaper, speaker, groups of people or interested groups?
5. What is the reason they have funded these groups?
6. What is their agenda by funded these groups?
7. At what angle the author, newspaper or interested groups showing this information? Why they have showed at this angle and why?
8. Does the author, speaker or interested group do what she, he, they talked? How did they show this? How they did not show this?
9. Does the character does what she, he, they said they will do?
10. What is the idealogical, political, cultural, financial, religious agenda of the interested party or groups?
11. Did the author selected who she/they will present the information first?
12. Did the author selected newspaper, journalists or group of interested people who will be presented this information for some sort of agenda?
13. Why did she, he, they choose this group of people to reveal information? What is the person agenda? What is the group interested agenda?
14. What are the interested groups? Make a list of the interested groups? What are the signs and features of those particular groups
15. Does the author, speaker, journalist, activist, writer, academic belongs to one of the interested group?
16. Does the audience belongs to the particular groups? What are the signs and features of particular group?
17. Follow the money? Where does the money flow from? What group of interested are funding? Do the interested group hid the money and secretly funding those groups?
18. What are the list of interested groups are ruling?
19. What are the capital groups? Who do they funding? What groups do they fund? Make a list. Why do they fund these groups? Make a list of reasons

20. Is there any trolls? What are their agenda? Who do hey belong to? What group do they represent? Are they paid trolls? What country, city, age, education, marital status? How much do they receive from this work?
21. Was the information manipulated or twisted to fit the narrative of one of the interested groups? What capital group this group belongs?
22. What group this situation is the most useful? Make a list of interest groups
23. What group this situation is the least useful? Make a list of interest groups

Rule 31-List of Interested groups and parties

1. Watch What They Do and Not What they talk.
2. What is the current political, government ruling? Dictatorship, democratic, communism, socialism, monarchism, authoritarian, Oligarchy, aristocracy, theocracy, colonialism, totalitarianism, military dictatorship, anarchy, confederation, unitary state, federation, autocracy, demarchy, direct democracy, electoracy, liberal democracy, liquid democracy, representative democracy, social democracy, soviet democracy, totalitarian democracy
3. Abortion
4. Agriculture and Food
5. Animals and wildlife
6. Arts
7. Entertainment
8. History
9. Budget
10. Spending
11. taxes
12. Business and consumers
13. Corporations
14. Capital
15. Campaign finance
16. Civil Liberties
17. Civil Rights
18. Constitution
19. Criminal Justice and death penalty
20. Defence and military.

21. Military industry Complex
22. Biggest Companies
23. Asset Management Companies
24. Drug and cartels
25. Economy, and fiscal
26. Education
27. Election
28. Employment and affirmative action
29. Entitlement and safety net
30. Family
31. Federal relation
32. State and local relations
33. Banking and finance and wall street
34. Fiscally conservative
35. Fiscally liberal
36. Food processing and sakes
37. Financial capital
38. Wall Street
39. economic interests
40. cause groups
41. public interests
42. private and public institutional interests
43. Political power in the political system
44. Non-associational groups and interests.
45. government policy makers and well-financed as prime movers in interest-group activity and policy making
46. Neo-corporatism
47. Corporatism and corporation
48. Lobbyist and tactics
49. Multinational corporation
50. Transnational corporation
51. Global corporation
52. Groups that have capital
53. Religious groups
54. Sects

55. Occults
56. Worship groups
57. Foreign affair
58. Forreign countries
59. Foreign aid
60. Gambling and gaming industry
61. Government budget and spending
62. Political party
63. lobbyist
64. Government operation
65. Guns
66. Health and health care
67. Big Pharma
68. Scientist
69. Insurance
70. Health insurance
71. Housing and property
72. Higher education
73. Immigration
74. Indigenious people
75. Infrastructure
76. Judicial branch
77. Courts
78. Solicitor and judges
79. K-12 Education
80. Infrastructure
81. Labor union
82. Union groups
83. legal
84. Legislative branch
85. Politician
86. Liberal
87. Marijuana
88. Marriage
89. Military and militarization groups

90. Minors and children
91. National security
92. Natural Resources
93. Oil and Gas industries
94. Religion
95. Reproduction
96. Science and research and academy and universities
97. Senior citizens
98. LGBT
99. SOCIAL
100. SOCIALLY CONSERVATIVE
101. Socially liberal
102. Taxes
103. Technology, social media communication
104. Mass media and communication
105. Taxes
106. Trade union
107. Trade
108. Transportation
109. Unemployment and low income
110. Veterans
111. Woman and man
112. Any other interested groups are out there?
113. Suppliers
114. Customers
115. Partners
116. Employees
117. Investors
118. Owners
119. Bankers
120. Regulatory bodies
121. Unions
122. Competitors

123. Society

124. Opposing pressure groups

125. Internal interested party examples:

I. Management
II. Employees
III. Corporate
IV. Owners

126. External interested party examples:

I. Customers
II. Suppliers
III. Community
IV. Bankers
V. Investors
Regulators
VI. Unions
VII. Trade Associations
VIII. Utilities
IX. Law Enforcement
X. Society
XI. Intellectual Property Owners
XII. Joint Venture Partners
XIII. Business Partners
XIV. Emergency Responders
XV. Industry Groups
XVI. Special Interest Groups
XVII. News Media
XVIII. Competitors
XIX. Consider these *six market categories* when identifying interested parties:

127. Customer: buyers, consumers, clients, end users, and retailers.

128. Supplier: producers, vendors, contractors, and distributors.

129. Intermediary: referral sources, connectors, agencies, and networks.

130. Influencer: financial markets, regulatory markets, and government.
131. Internal: employees, staff, managers, and business units
132. Alliance: joint ventures and business partners
133. **Responsibility** – investors, etc.
134. **Influence** – pressure groups, etc.
135. **Proximity** – neighbours, etc.
136. **Dependency** – employees, etc.
137. **Representation** – trade unions, etc.
138. **Authority** – regulators, etc
139. Foreign governments and international organizations. Countries maintain a wide array of embassies and consulates in foreign countries, and they often use these and hired lobbyists to work for such benefits as foreign aid and military support, as well as to boost the country's image abroad. International organizations (e.g., UNESCO, Asia-Pacific Economic Cooperation, the Arab League, and the Organization of American States) use their resources in manners similar to governments.
140. Multinational corporations (e.g., McDonald's, Coca-Cola, Honda, Volvo, and) and business trade associations (e.g., the International Chamber of Commerce and the European Association of Manufacturers of Business Machines and Information Technology). These often have extensive global or regional reach. Their major concerns in lobbying relate to similar issues that they have within individual countries and include ensuring favourable labour codes and tax structures, making trade as free as possible, ensuring favourable laws regarding government regulation of their product (e.g., food and drink) or service (e.g., telecommunications), and trying to minimize added costs such as those involving environmental regulations. Because of their extensive resources and the fact that the government relies on the economic advantages provided by these multinational corporations, they are often successful in achieving their lobbying goals.
141. Special interest and cause groups. These include the World Council of Churches, the Baptist World Alliance, the Anglican Communion, international networks of LGBTQ-rights groups, and the Inuit Circumpolar Conference, an organization

of indigenous peoples of the Arctic and subarctic regions of North America, Europe, and Asia. Such groups and organizations are involved in international lobbying for a variety of reasons and with mixed success. Some, such as churches, often lobby simply for the right to operate in a country and on behalf of human and civil rights and the poor. Others, such as indigenous groups, lobby for the rights of their compatriots in terms of preserving their customs and language and repatriating artifacts that may have been taken to other countries and are now housed in museums around the world (particularly in countries that were former colonizers).

142. International public interest groups (nongovernmental organizations [NGOs]). NGOs embrace a wide range of groups that focus on issues of broad public concern, such as human rights, child welfare, and the status of women, as opposed to the specific interests of particular businesses or sectors of society, such as automobile manufacturers and physicians. At the meeting in 1945 in San Francisco that drew up the UN charter, some 1,200 NGOs were in attendance. Though there is no current, reliable count of NGOs, they mushroomed in the period after World War II and may number as many as 10,000; in Latin America alone it is estimated that there are some 2,000 NGOs, many of which work in several countries. Significant among the multitude of NGOs operating in world politics today are Human Rights Watch, Oxfam International, CARE, Greenpeace, the World Wide Fund for Nature, and the Women's International League for Peace and Freedom. NGOs enjoy mixed success in their political activities, partly because governments rarely rely on these groups to maintain themselves in office. Most operate far from public view, and their successes may receive little publicity. Some, however, such as Greenpeace, receive major publicity for their campaigns.

Rule 32- Who Will Use This Situation

A. Who is the person/organisation or group that this situation is the most useful?
B. Who is the person/organisation or group that this situation is least useful?
C. Did the author used all AVAILABLE SOURCES, INFORMATION, FACTS AND ARGUMENTS TO HIM/HER.
D. Does the author trying to rewrite facts, information, history of the subject to fit his/her arguments and situation?
E. Did the author do honest analysis of all available sources, information, arguments, evidence and facts?
F. Whom this situation is the most useful?
G. Whom this situation is the least useful?
H. Who is the winner of this situation?
I. Who is the loser of this situation?
J. Who is the victim in this situation?
K. Who is not the victim in this situation?
L. Who is the most likely used this situation to his/her/their advantage?
M. Who is the least likely used this situation to his/her/their advantage?
N. Who got harm in this situation?
O. Who did not get harm in this situation?
P. Almost at the end ask questions about the funds provided to the author, presenter, researcher, speaker, publisher and find out about the source of the funds provided. This is the outside research needs to be done. Follow the money.
Q. Who or what is the most influenced in this situation?
R. What are the corruption scheme in this situation/government, company, person or group of people?
S. What are the corruption diagrams in this situation by government, company, person or group of people?
T. Who is at fault in this situation?
U. Who is not at fault in this situation?
V. Who funded this whole scheme and situation?
W. Where the funds came from?
X. Where the funds where? Who received the funds?
Y. Was this legal scheme?

Z. Is the current situation or crisis or breaking news is there to cover something bigger behind? Like trying to pass new laws or corruption or purchase which are illegal. What are these things that been tried to hid behind big news. Research everything?

AA. Who losing the most in this situation?

BB. Who is losing least in this situation?

CC. Who is winning the most in this situation

DD. Who is the winning least in this situation?

EE. Does the person tried to incorrectly paraphrase the arguments or facts or evidence?

FF. Is there conflict of interest between these two parties?

GG. Who is the breaking conflict of interest?

HH. Was there are any Break a law, code of, GDPR?

II. Was there any hidden in the accounting? What was hidden? What was tried to be hidden? Why was hidden?

JJ. What or who the person tried to protect?

KK. Was there any motivation behind some of the actions?

LL. What was the motivation behind these actions?

MM. What are the mathematical formulas behind?

NN. What are the flow chart of decision. What would be outcome if they would decide one way or the other?

OO. Was the person who speaking, presenting, author, researcher representing other side correctly and honestly?

PP. Was the speaker, presenter, author and researcher were paid by somebody to do the propaganda and throw the dirt on other people?

QQ. Was there any propaganda used in the speech, research, book or article so that they/ he/ she advising about other side incorrectly?

RR. Did I use evidence, facts and sources for every argument, premise, conclusion and sentence?

SS. Did the other side used sources, facts, evidence for every sentence, premise, argument and conclusion?

TT. Did the analogies are correct?

UU. Did the analogies really represent other side or my side?

VV. What type of arguments presented by other side?

WW. Was other side used epithets about other side? Was this is logical fallacy? Did I use the epithets? Did the other side understand this epithets? Why did they think this was

appropriate way or time to say this? Was this what other person think? Was this objectively true or not? Was this breaking any law?

XX. Does the other side understand the definition of this term?

YY. Was this is a troll who is not looking to get the correct information, but troll others and me?

ZZ. Is this person looking appropriate discussion?

AAA. Is this person trying to persuade you appropriately with full information which is correct or incorrect?

BBB. Would you apologise if provided facts and evidence were wrong for the arguments which were lead to wrong conclusion?

CCC. Does the person know or understand that he/she/they are wrong or right?

DDD. Why they they think they are right?

EEE. Why they think they are wrong?

FFF. How do we know that this happened exactly the way he said? Do we have facts? Evidence?

GGG. Use **What, who, why, when, where, how, do , did, can, may do not, did not, cannot may not, might, might not, does, does not.**

HHH. Does the person has the education to speak about this subject?

III. Does the person has honestly went through the criticism of the opposing ideas? Did the person found the reason he opposing to the other person?

JJJ. Does the person have serious intention to confuse audience?

KKK. How well does the person do the job to confuse the audience?

LLL. Did the person introduced new terms or arguments?

MMM. Did the other person did a good job to research his her ideas and opposing person ideas?

NNN. What is the reason the person trying to confuse audience?

OOO. What propaganda tools did the author, speaker, writer used in analysing this idea and opposing person idea?

PPP. Did the person understood or understand that he used propaganda tools.

QQQ. What sources did the other person used in analysing opposing person arguments?

Rule 32- Do Research archeology on the Book.

Rule 33- Do Research Geography.

Rule 34- Cultural Practice.

Rule 35. Legal Analysis of the Book.

Rule 36- Literature Review.

Rule 37- Mathematical Analysis.

Rule 38- Statistical and Probability Analysis.

Rule 39- Religious Customs.

Rule 40- Rhetorical Analysis.

Rule 41- Engineering Analysis.

Rule 42- Audience Analysis.

Rule 43. Circle of Context analysis.

- **Immediate context.**
- **Book Context.**
- **Author's Corpus of Writing Context in other books (Where Available).**
- **Historical Context**
- **Logical Context**
- **Rhetorical contexts**

Rule 44-Analyse Semantically

Rule 45- Syntax Analysis

Rule 46 Historical Background

Rule 47 Cultural Background

Rule 48 Economic Background

Rule 49 Technological Background

Rule 50 Legal Background

Rule 51 Environmental Background

Rule 52 Social Culture

Rule 53 Philosophy Gap

Rule 54 Theology Gaps

Rule 55 Anthropology Gaps

Rule 56 Political Science Gaps

Rule 57 Psychology Gaps

Rule 58 Sociology Gap

Rule 59 Biology Gap

Rule 60 Chemistry Gaps

Rule 61 Earth Science Gaps

Rule 62 Science Gaps

Rule 63 Physics Gaps

Rule 64 Computer Science Gaps

Rule 65 Mathematical Gaps

Rule 66 Business Gaps

Rule 67 Engineering Gaps

Rule 68 Medicine and Health Gaps

Rule 69 Sociological Gap

Rule 70 Anthropological Method

Rule 71 Statistical Method

Rule 72. Who are the experts in this Area, Topic, Discipline. What do The experts say? Do they agree with the author? If yes, why, and if no Why?

Step 47-Was There Propaganda or Conspiracy Theories Or Trust In Science Theories. In the Book and Propaganda Analysis.

1. **Review the Propaganda of the following:**
    - **Text**
    - **Writing**
    - **Book, Journal, Article, Report.**
    - **Bible**
    - **Sermon**
    - **Dissertation**
    - **Government Documents**
    - **Theses and Dissertation**
    - **Newspaper, Magazines**
    - **Audiobook**
    - **Sermon and Preaching**
    - **Public Speaking**
    - **TV**
    - **Radio**
    - **Podcast**
    - **Communication, Talk. Speak, Conversation, discussion, Debates**
2. **These are the following books to use for Review and Analysis of Propaganda:**
    - **All Art of Propaganda by George Orwell.**
    - **Computational Propaganda by Samuel Woolley.**
    - **Fake News, Propaganda and plain old lies by Donald Barclay.**
    - **How Propaganda Works by Jason Stanley.**
    - **Propaganda and Persuasion by Garth Jowett.**

- **Media, persuasion and Propaganda by Marshall Soules.**
- **Primetime Propaganda by Ben Shapiro.**
- **Propaganda Studies by Jonathan Auerbach.**

3. Do Lateral Reading:
    - Question & Research Task We know not to believe everything we hear, but what about what we read? What about what we see? The online world is full of misinformation: false or inaccurate information, especially that which is intended to deceive. One way to avoid being fooled by misinformation is by practicing lateral reading, a tool used by professional fact checkers. Lateral reading focuses on using many sources to corroborate, or confirm, information, instead of just relying on one authentic looking source. In today's lesson you are going to learn about and practice lateral reading.
    - Information Sources Now it's time to learn more about lateral reading and investigate some sources using this technique. • What is lateral reading? • How do we do it, and why is it important? Use paper or a word processing document to answer these questions as you review the sources below and on the right. • The ART of Reading Laterally • Stanford scholars observe 'experts' to see how they evaluate the credibility of information online • Students Fall for Misinformation Online. Is Teaching Them to Read Like Fact Checkers the Solution?
    - Student Activity Use your new knowledge about reading laterally to analyze the truth and accuracy of at least three of these sources.
    - Assessment Activity. Now that you're an expert on lateral reading, it's time to share what you've learned! Imagine your principal has asked you to prepare a brief (two paragraph) article for the school's website about lateral reading. The purpose of the article is to persuade your classmates to use lateral reading in their own research. Your article should answer our inquiry question: "How can lateral reading help you avoid being fooled by fake information online?" Use your research and analysis from class today as evidence for your article. Use the success criteria on this rubric to self-assess your work. 2. Don't forget to take the Lateral Reading Schoology Quiz as assigned by your teacher or librarian to show what you've learned about lateral reading.
    - Open A New Tab in Your Browser.
    - Search The Name of the Unfamiliar Source.
    - Check What Trustworthy Sites say about it

- If the Source Seems Untrustworthy, Don't Waste Your Time On IT. Find A Better Source.
- **Check for previous work:** Look around to see whether someone else has already fact-checked the claim or provided a synthesis of research. [Some places to look: Wikipedia, Snopes, Politifact and NPR's own Fact Check website.]
- **Go upstream to the source:** Most Web content is not original. Get to the original source to understand the trustworthiness of the information. Is it a reputable scientific journal? Is there an original news media account from a well-known outlet? If that is not immediately apparent, then move to step 3.
- **Read laterally:** Once you get to the source of a claim, read what other people say about the source (publication, author, etc.). **The truth is in the network.**
- **Circle back:** If you get lost or hit dead ends or find yourself going down a rabbit hole, back up and start over.

4. Best Way Fighting with Disinformation and misinformation are the following:
   A. What Does the Information Provides, Use Star Method
      - Situation- What the information given?
      - Task- Does the information describe the task and responsibility?
      - Action-does information explains exactly the steps
      - Result- What is the result?
   B. Use Questions:
      - Who? What? When? Where? Why?
      - How?
      - Can? Could?
      - Would? Should?
      - Do or Does
      - Has or have?
   C. Always question even the most obvious.
   D. Has this information passed three filters?
      - First Filter is that of truth. Are you completely sure that, what information is going to tell me is true in all its aspects?
      - Second Filter is that of Goodness. Is what you are going to tell me something good or beneficial?
      - Third filter is necessity. Is it necessary for you to tell me this about my friend?
      - If it's not true, nor good, nor necessary, then it does not deserve to be heard.

E. Always ask Questions Using Socratic Method and Questioning
F. Understand that Facts do note care about your feeling
G. Do the Fact Checking, Do the figure check and Verification of the Data.
H. Is this date from reputable source? Why do you think even reputable source can be trusted and rely on?
I. Can I check this information on another media platform?
J. Has the information provided evidence and robust investigation rather fabricated ideas that intrigue?
K. Des this was witnessed by more than 1 person? How do you know that the witnesses are not lying, and Not CONSPIRE Against?
L. Does the information contradictory with other information? Where does the contradictory occurs? How can we know that one side and the other side is telling the truth?
M. Was there any inconsistencies? Inconsistency is a failed argument.
N. Has anybody verified and fact and figure checked already?
O. Has there been two opposite experience, and how to validate both?Why should I rely on one person experience and not on the other person experience?
P. Do not share information without thinking
Q. Was there enough information out there to gather information to make some sort of conclusion?
R. Was information hidden by one group of people? If yes, then why was this hidden?Why do they think, we should not have this information?
S. Has there been debate between two side of experts who disagree on these issues? Have they had any official debate? Who provided more logical and common sensical arguments, Conclusions and evidences based on the all available information?
T. If there was no debate, why was this? Which side did not want to participate?
U. Was there any censorship on this information? why was this censored? Who was responsible for censorship?
V. Does anybody trying to prevent you to make a decision for yourself? Why is that? What ways they are preventing for you to get this information?
W. Do the one or other side care about the truth? What is their agenda?
X. Do One of the side wants honest conversation and debate? Use Rhetoric, William Lane Craig, Greg Koukl, Aristotle, Socratic Method, Plato dialogue And Socratic Questioning ETC.

Y. Who had gain for censoring this information?
Z. Believe should be based on the objective facts, logic, Reason, Evidence. Does the Premises leads to the conclusion or not? Do the reasoning align with the reality. Does the world works and align with the reality.

AA. Add The William Lane Craig method on top regarding the Debate.

Conspiracy Theories.

1. What?
2. Who?
3. Where?
4. When?
5. Why?
6. How?
7. Analyse the Conspiracy Theory by Eric Weinstein:
    A. Rule 1-One should not attempt to allege type of conspiracy that has never been encountered before. Over the years many conspiracy has been discovered. There is a menu of proven conspiracies with which we can figured out whether this conspiracy theory is possible. Ask Yourself The following Questions:
        I. Is it possible that mainstream media can be weaponised by intelligence agency for the purpose of destroying well know or ordinary person Reputation by planting stories in mainstream media. What are examples of this type of case? Destruction of (Give the name of the Person)?
        II. Does the Governments have ability by using intelligence agency to make sure the person is gone from this earth for doing something good?
        III. Can you have a highly coordinated silent hit with tremendous complexity going off almost without a hitch?
        IV. Is it possible that a person was suicided by intelligence agency by let them know that they will turn their live into living hell, as the person thinking commuting suicide is the only way out?
        V. Was there any time when intelligence agency contemplating examine using organize crime in order to carry out act that they did not want to do themselves?
        VI. Would have every had that intelligence agency used party or honey pots and trap with elaborately constructed backstory in which an actor and the character that they played are completely different? Example of this Elis Kone.
        VII. Is there intelligence community interesting to control the media. Example mockingbird.
        VIII. Is there any attempt to gain control of innocent influencers. Are there any circumstances in which people simply have a crime by being influential used against them?

B. Rule 2- Is there a possibility of this Conspiracy theory in reality?

8. Does The Conspiracy theory Has a ground in reality?
9. Always ask central questions is there any government or intelligence agency involved in this case or situation?
10. Who pulling the strings?
11. Was there any documents that are important in this situation or Case? Are those documents are classified or open source, like trading documents, invoices, emails, contracts or any other important documents.
12. What is the structure in this situation and case?
13. What is the time line of this situation or case?
14. Was the person/people or the company or government has spending like billionaire? Do they have a mean to do it?
15. What is behaviour pattern of the person, people or company, government or any other entity in one group or other group.
16. Was there any media interest in this case? If yes or No, then why was or was not?
17. Have these groups somehow connected to each other?
18. Have one of the person, people group gave interview? What has been said and why this been said this way but not the other way in this situation or case or for this situation or for those case?
19. What does the person, company, corporation group of people wanted message to be in the interview?

Trust In Science Theories.

1. What?
2. Who?
3. Where?
4. When?
5. Why?
6. How?
7. Does the claim made by author suggest the trust in science that is called scientism?
8. Does the author states that science is only way to truth or only option for rational thinking person and everything is fairy stories?
9. Was there push to believe that Science is only answer to everything without providing any evidence?
10. Are the person who says trust in science thinks that the one who does not trust are unreasonable morally deficient?
11. Does the person think that the science is a new saviour?
12. Does the person understand limitation of Science?
13. Can the person that trust fully in science answer the following questions?
    A. Who Am I?
    B. Where Do I come From?
    C. Where am I going to?
    D. What is the meaning of life?
    E. Where do I get moral Compass
14. What are the science limitation?
15. Where does the Scientism leads to?
16. Does the person promotes Naturalism? The nature that it is?

Step 48-What Did I take From the Book.

A. Read or listen 25min and 5min break
- Read or Listen 20 pages an Hour according Mortimer Adler

B. Read or Listen between 1-50 times the book

C. Speed of Audiobook
- Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed

D. What did I read?

E. What did it mean to me?

F. What characters, stories or ideas from this book most stood out to you?

G. What character can you connect with the most in the book? Why?

H. Does this character reminds me of somebody I know?

I. Which part of the book am I having the most difficult understanding or connect with? Why do I think this is?

J. What was most surprising, intriguing or challenging to you about this book?

K. What are the next steps for you after reading this book? What would you like to do, read, or learn more about?

L. What were some of the differences between this book and the books you typically read?

M. What did I learn from this book? What will you take from this book moving forward?

N. How do themes and ideas from this book relate to things you are learning in and out of the classroom?

O. What questions do I have about the book I read?

P. What event did I attend and why did I choose it?

Q. Describe the event. What did you learn from it? What was most surprising or interesting to you about the event?

R. What are the next steps for you after attending this event? What would you like to do, read, or learn more about?

S. Non-Fiction Reflection questions
1. While you were reading today, describe what you pictured in your mind about the story.
2. Which character can you connect with the most in your book? Why?

3. This character reminds me of somebody I know.
4. Which part of your book are you having the most difficulty understanding or connecting with? Why do you think this is?
5. What have you done that is similar to what the characters experience in your book
6. How does the part that you read today fit together with the parts that you read earlier?
7. Predict what will happen in the next few chapters/remainder of the book. Support your prediction with facts/quotes from the story.
8. Based on what the characters say or do, what can you infer about their attributes/ personalities?
9. Describe the setting. What is its significance to the story? How would the story be different in a different time or place?
10. What motivates the protagonist (main character)? How do you know? Use evidence from the book to support your answer.
11. What are the major obstacles that your protagonist faces? Explain why you think these are most important.
12. Write a letter from one character to another. Be sure to use two quotes from the text within the letter.
13. Create a diary entry in the voice of a character. Be sure to use two quotes from the text within your entry.
14. Find a quote that stands out to you and explain why you chose it.
15. Choose a character from this chapter. What do you like the most or the least about them? Why?
16. How realistic is the plot of your book?
17. Find some interesting dialogue. Explain what is happening between the characters involved.
18. If you could "jump" into your book right now, what would you do in the story and why?
19. Which character would you like to have as a friend and why?
20. Which part of the story caused the strongest feelings in you? Why?
21. I wonder what this part means
22. This part is very realistic/unrealistic because.
23. The character I most admire is….because
24. I love the way

25. I can't believe that ….
26. If I were ….., I would ….
27. I'm not sure that …
28. I like the way the author ….
29. I felt sad/elated/apprehensive when ….
30. My favourite part of the book so far is ….
31. This part of the story reminds me of (another title) because ….
32. What were your feelings after reading the opening chapter of this book?
33. Did this book make you laugh? Cry? Cringe? Smile? Cheer? Explain.
34. What connections are there between the book and your life? Explain.
35. What is the most important event in the book? Explain.
36. Who should or shouldn't read this book? Why?
37. What are the best parts of the book? Why?
38. What are the worst parts? Why?
39. Do you like the ending of the book? Why or why not? Do you think there is more to tell? What do you think should happen next?
40. What came as a surprise in the book? Why?
41. What parts of the book seem most believable or unbelievable? Why?
42. What makes you wonder in this book?
43. What confuses you in the book?
44. In what ways are you like any of the characters? Explain.
45. Do any of the characters remind you of friends, family members, or classmates? Explain.
46. Which character would you like to be in this book? Why?
47. What would you and your favourite character talk about in a conversation? Begin the conversation.
48. Do you think the title fits the book? Why or why not?
49. What do you know now that you didn't know before?
50. What questions in this book would you like answered?
51. What do I think will happen next?
52. What are some words I don't know or questions I have?
53. What does the writer's purpose seem to be?
54. My favourite character is …… because….
55. I can relate to….
56. If I were the author, I'd change….

57. Something that doesn't make sense about this story is…
58. What I think will happen next is….
59. If I were (character in story), I'd….
60. I believe the author wants the reader to….
61. Something unrealistic or too coincidental in the story is….
62. My favourite sentence so far is ….. because….
63. The most important character is ……. because…
64. Write a poem from a character's viewpoint
65. Write a poem about the setting.
66. Write a poem about a character.
67. If you could be related to a character, who would it be and why?
68. Write a solution for a problem a character has that is different from anything suggested in the book.
69. In the sequel to this book, the following should happen….
70. Choose a food that represents this book and explain why.
71. Create a theme song with lyrics for the book.
72. Write a letter to the author of your book.
73. Choose a character and decide what would be two appropriate birthday presents for that character and explain why.
74. What type of reader would enjoy this book and why?
75. This book has made me reconsider or think twice about … because….
76. Discuss a conflict in the book that is "timeless" and "universal."
77. If I could step into the book, the first thing I would do is….
78. I can't understand why (character) doesn't just ….
79. I laughed aloud when….
80. I felt like crying when….
81. I was furious when….
82. I was surprised when…..
83. This book reminds me of the fairy tale _____because…
84. If I were making this book into a movie, the part(s) I would cut out or change would be…because…
85. Create a cluster showing the interrelationships of the characters.
86. Discuss how (character) shows his/her personality through the dialogue in the story.
87. Discuss how (character) shows his/her personality by the actions he/she takes.

88. Discuss how (character) shows his/her personality by what other characters say or do toward this character.
89. Create an award for this book. Explain the award and why this book received it

T. Non Fiction questions

1. Which part of the book are you having the most difficulty understanding or connecting with? Why do you think this is?
2. How does the part you read today connect with what you already knew about the topic?
3. Find a quote that is interesting to you and explain why you chose it.
4. I can't believe that . . . .
5. My favourite part of the book so far is . . . .
6. Who should or shouldn't read this book and why?
7. What do you know now that you didn't know before?
8. What are some words I don't know or some questions I have?
9. I believe that the author wants the reader to . . . .
10. Write a letter to the author of this book.
11. This book has made me think twice about . . . .
12. Create an award for this book. Explain the award and why this book received it.
13. Now that I've read this book, I want to learn more about . . . .
14. I used to think …….., but now I know
15. I got off track in reading when ……because
16. Describe a part you had to read twice and why.
17. I've always wanted to learn more about ……
18. A career in which I could use this information would be ……
19. Does the content in the book affect your life? How so?
20. What solutions does the author propose? Do you agree with them and why?
21. What text features does the author include? Which ones were of particular help to you in reading the book?
22. Of the information you learned, what would you like to share with someone else?
23. What kind of research do you think this author had to do in order to write this book?
24. Which questions would you ask the author if you had the chance to meet him/ her?
25. Would the book be different if it had been written 10 years ago? Why or why not?

26. Did you discover anything that may help you outside of school?
27. Who is the author? What are the author's credentials and how reputable is the author?
28. What inferences are you expected to make when you read this book?
29. What are the implications of this issue?
30. Is there a call to action or a caution within this book?
31. What is the author's intent in writing the book?
32. What are some interesting vocabulary words that you have learned from this book?
33. This book reminded me of ……
34. If I wrote a book about this topic, I would include ……..…
35. The most exciting thing I learned from this book is …….
36. I would recommend this book to ……because …….
37. The part of this book I had difficulty understanding is ……..…

Step 49-Implication of The Book.

A. Implication

- **What are implication of this?**
- **Implication-process in min implication of the text.**

Step 50-My Arguments For Or Against The Author, Writer, Speaker, Debater.

Rule 1 What Is Your Opinion, Arguments About:

A. Logic.
B. Grammar.
C. hermeneutic.
D. Book.
E. Topic.
F. Authors arguments.
G. Authors opinion.
H. Facts.
I. Evidence.

Rule 2 My analysis and arguments and Objections

A. Re-read 5 times, my objections to review if I been honest and did not make the following
B. Think very careful how to answer these objections? Did I correctly understood these objections?
C. Did I carefully reviewed the arguments and objections
D. When I criticised the book, topic, authors arguments, authors opinion, facts, logic, grammar hermeneutic. Did I make any Logical fallacies and did I take all things into account?
E. Did I try my best to criticise fairly the topic or Book or article or speech or Comment by author
F. Think very careful how to answer these objections? Did I correctly understood these objections?
G. Did I carefully reviewed the arguments and objections
H. What is the best way to prepare for response to the objections? Did I checked all my sources and facts that these facts would not be incorrect?
I. Write the objections which would be very well researched.
J. Where did the author used incorrect information, statistics, facts or made logical fallacy in presentation, writing, speech, talk, discussion, debate etc.
K. Did I take the best arguments from opposing side on the topic, book, argument, facts from opposite side
L. Did I PROVIDE THE BEST arguments against the opposing side and provide: best analysis, did not make any fallacies, honest and in the context analysis, provide correct facts, statistics.
M. Did I provide date in my arguments?
N. Were they truthful and honest?
O. Am I data driven person in providing the arguments?
P. Am I data driven person in providing and analising opposite arguments and my own arguments
Q. Was my arguments were strong or weak?
R. Did I try my best to be honest with the other opposing side arguments and data? out what ideologies behind these arguments?
S. Arrange nicely all book
T. Does the author, presenter, speaker, writer calling opposing person by name to discredit him/her/ them?

U. Why do they want to discredit?
V. Did the author used all AVAILABLE SOURCES, INFORMATION, FACTS AND ARGUMENTS TO HIM/HER
W. Does the author trying to rewrite facts, information, history of the subject to fit his/her arguments and situation?
X. Did the author do honest analysis of all available sources, information, arguments, evidence and facts?

Rule 3 Evidence and lead

1. Did I allow the evidence to lead whatever it takes?
2. Why I have not allowed?
3. How do I allow the evidence to lead whatever it takes?

Rule 4 Fit to my Knowledge

1. Where does this fit in my knowledge about the topic and the world?
2. Where does this fit?
3. Does this fill the gap in my knowledge? Or deepen the gap in the knowledge about topic or the world?
4. Make a Mind map how this fit to my personal knowledge.
5. Make a mind map how this fit to the world knowledge.

Rule 5 Did I Follow the Evidence

A. Did I follow the evidence where it leads to?
B. How did I follow the evidence?
C. Did I Push the goalpost for acceptability farther than at the beginning of the analysis of the topic?

Rule 6 Was there any prediction of the future

A. Was there any prediction of the future by author, writer, presenter, speaker?
B. What are the predictions?

Step 51-Improve My Arguments and I would Have Another Chance, how would I Approach.

Where Do I need to Improve on my argumentation

A. Read More sources?
B. Listen more different perspectives on the same subject?
C. Improve my grammar
D. Improve my logical analysis
E. Improve my hermeneutical analysis
F. Improve mathematical logic
G. Improve mathematical facts
H. Improve statistical facts
I. Provide more facts
J. Provide more evidence
K. Ask more questions
L. Use socratic method and questions and tactics in my approach?
M. Did I represent other side honestly
N. Did I represent other side argument in full and without any omit information?
O. Be better in my presentation?
P. Be better in my body language
Q. Be better in controlling emotions?
R. What is the best approach in this situation?
S. Was I honest in the whole approach?
T. Was I HONEST IN My analysis?
U. Did I use all available information, facts and arguments to me, when responding to the objections?

If I WOULD ANOTHER CHANCE, HOW WOULD I Approach

A. Analyse the argument
B. Analyse information
C. Analyse facts
D. Analyse Evidence
E. Analyse my arguments to response to the other party
F. Would there be any change in my response?
G. What would be differently?
H. How differently?
I. How would I approach? Body language, tone, argumentation, facts provision, evidence provision, research tactic- asking questions, Socratic method and questions

Step 52-Basic Exploration, Experimentation and Practice.)

1. Step 1-Basic Exploration, Experimentation and Practice.

I. The primary goal here is to simply explore based on your instincts without attempting to achieve any particular purpose. The experimentation is obviously with respect to the particular module you are focusing.

II. If your modules focus on some technology-orientated topic, then in this step you play around with different software to familiarise yourself with these different tools to understand ways in which they functions.

III. If your topic is something more theoretical, then you would need to ponder what exactly you want to learn about and then form some hypotheses about how those concepts or process manifest themselves, and the best way you can start learning them.

IV. The goal of this step is to stipulate (demand) our mind to start asking the right questions about our modules. These questions will be most important outcome of this step.

V. This step entails answering the questions you came up with in the previous step.

VI. In this steps you will attempt to answer at least some of these questions if not all of them. For this, you would need to revisit the various resources you aggregated earlier and use them to first, answer all the questions you came up. Second to acquire as much knowledge as you can. Continue this process until you believe you have learned enough about this specific module.

VII. You would need to go back and forth between learning new things and applying them practically to reinforce your newfound knowledge.

VIII. Split time between learning and practical application.

IX. Experiment on trial and error.

Step 53 - Note Taking

1. The Blank Sheet

The single biggest change you can make to getting more out of the books you read is using the blank sheet method.

Over the years I've tested multiple approaches and this one works best for simplicity and effectiveness — it will 10x your comprehension overnight.

The blank sheet primes your brain for what you're about to read and shows you what you're learning.

Here's how it works:

1. Before you start reading a new book, take out a blank sheet of paper. Write down what you know about the book / subject you're about to read — a mind map if you will.
2. After you finish a reading session, spend a few minutes adding to the map with a different color.
3. Before you start your next reading session, review the page.
4. When you're done reading, put these 'blank sheets' into a binder that you periodically review.

2. Conventional Notes

Forget the teacher that yelled at you for writing in your book when you were a kid. You bought this thing. It's your property. You need to write in the margins.

Here is a very simple process to take notes while reading:

- At the end of each chapter write a few bullet points that summarize the main idea or specific points. Use your own words and not the authors. Try and connect it to something in your life — a memory or another idea. Also, make note any unanswered questions you had while reading.
- When you're done the book, put it down for a week.
- Pick up the book again and go through all your notes. In a lot of cases, reading your notes will be as good as reading the book again.
- On the inside cover write out the main idea of the book using your own words. If you find yourself stuck, review your notes. (This is called the Feynman Technique). Writing is the process by which we often discover we don't know what we are talking about.
- You can even make a custom index on the back cover with themes or topics.
- (Optional) Copy out the excerpts by hand and put them on the back of your blank sheet from above or type them out and put them into Evernote. Tag accordingly.

3. **Note Taking**

I. Normal note-taking with as much detail as you can.
   - Copy down the information you ordinarily you need to know as you encounter the material.

II. Summarising the information in your own words, clarifying the significance and noting question.
   - Do not repeat the initial note, even if you took your notes in complete sentences.
   - Converting the note to language that helps you understand the meaning is essential.
   - Try to make connection and find relationship within the information.
   - List any questions you have about the notes you have took in step 1.

III. Connecting this particular piece of information to the lesson at large.
   - State any connection you can find between the subject of that note and the broader topic you are studying.
   - Is there any cause and effect relationship with broader topic.

IV. Answering remaining questions and then summarising each distinct page or section again.
   - Revisit, synthesise and transform the information you have learned.

4. Cornell Note Taking

This method of note taking is useful because it enables you to keep track of questions or thoughts that occur to you while making notes. It also allows you to go back and add comments to a page of notes or connect ideas from one source to another.

The Cornell note taking method serves multiple purposes:

- Notes from the lecture or readings, so that you have a record of information you may have forgotten (Details section).
- Summary of what was covered in the lecture or reading which you can easily look through (Summary section).
- A set of key points and/or questions that serve as a mini study guide (Main Ideas section.

Method

During class

- take down information in largest area of the page.
- when instructor moves to new point, skip a few lines.

After class

- complete phrases & sentences as much as possible.
- for all significant information, write cue in left margin.

After writing the notes in the main space, use the left-hand space to label each idea and detail with a key word or "cue“

An example of Cornell Note taking form is below – blank sample follows.

DATE:

IDEA/ Name of the lecture:

Main Ideas and Questions Details

Summary of Notes After Class

Homework For Next Week or Months

Important Information For assignment, Exam or Other

5. Richard Feyman Note Talking Technique

I. **Choose a concept and Write At the TOP Page. Select a topic you're interested in learning about and write it at the top of a blank page in a notebook.**

   A. **Write What You do Know About The Topic or Concept. Write what you know, as if you were explaining to yourself.**

   B. **Write What you Do not Know About The Topic or Concept. You need to be specific. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.**

   C. **What Book Explains the Best About This Topic.**

   D. **You have to start small. You really only have a page (or a few) to fill up with information. You can't fit everything there is to know about "Evolutionary Science" or "Microeconomics" or "Psychology" on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.**

   E. **Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.**

   F. **Actually put the time and effort: Once you have selected the correct set of topics, make sure you actually spend the time and effort to go through the entirety of the techniques. Feynman technique is great for having a basic framework of the topic inside your head with the details chopped off. It's important to get a very clear picture of the basics in your head right - the details can be filled in later.**

G. Make it your own.

- Start with not knowing.
- Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
- Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

H. Take Notes On the Topic From Study.

I. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

J. Don't write notes on notes: Life is short.

II. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

III. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.

B. Simple is beautiful.

C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

E. Go back to the source material, reviewing the parts you don't quite understand yet.

F. Repeat until you have a simple explanation.

IV. **Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.**

V. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, podcast – and fill the gaps in your knowledge.**

VI. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:
B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.
C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

VII. each it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

VIII. Reflect, Refine, and Simplify.

A. **Only when you can explain the subject in simple terms do you** understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

IX. Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.

X. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

XI. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

6. Flow Chart (More for the Debate, Discussion, Dialogue, Conversation and Communication)

A. Take Notes While the Opposition is speaking In Debate, Dialogue, Conversation and Communication:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

7. Use Cornell Note Taking.

A. **Name.**
B. **Date.**
C. **Class and Period.**
D. **Topic.**
E. **Essential Question at the Top of Page.**
F. **Questions and Main Ideas on the Left Page of the Blank Page.**
G. **Notes On the Right Page of the Blank Page.**
H. **Summary at the bottom of the page.**

8. **Analytical Learners: Outline/ List. Good Works well for recording terms, definitions, facts and sequences.**

9. **Sentence Method: The goal is to jot down your thoughts as quickly as possible. Works well in meetings or lectures that lack organization. Use when information is being presented very quickly.**

10. **SQ3R (Survey, Question, Read, Recite, Review). Use for dense readings (like business books, text books, whitepapers, etc.). You start the process by skimming the material for bolded text, images, diagrams and summaries in order to produce a list of headlines or main topics.**

11. **Mapping. Mapping is a nonlinear system of note-taking that resembles a tree and root structure. Ideas stem from one major concept and are connected by lines (or "branches"). As a note-taking system, mapping works particularly well for visual learners, but it can also be a great tool for analytical-thinkers who have trouble brainstorming because it allows you to make connections you'd otherwise miss with a linear format. Works well for planning essays, recording meetings. Use for big-picture brainstorming sessions.**

12. **Smart Wisdom. It's a tool optimised for active listening in lecture situations. Instead of taking notes in full sentences, you record only keywords and place them in a chain that maps the thought process.**

13. **Diagram And Processes. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

14. **Diagram And Processess. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

15. **Charting. Charting is a great note-taking strategies when you need to compare and contrast ideas. The most widely used charting method is the Pro and Con list.**

16. CERC.

A. **Claim.**
B. **Evidence.**
C. **Reasoning.**
D. **Conclusion.**

17. Use Smart Notes.

A. **What is big Idea.**
B. **Question.**
C. **Evidence.**
D. **Conclusion.**

Step 54-Simplify The Topic For Myself First

I. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

Step 55-Reflect, Refine And Simplify

I. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

Step 56-Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.

1. **Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method and Follow Each Steps Of The Method Until Finish All Steps, While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times For Each Step.**
2. **Following Rules of Reading Methods:**
3. **Choose One of the Method of Rules of Reading For Following:.**
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**

III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
VI. **Method 6-Devotional Bible Read. Pages 72-73.**

D. **Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
I. **Method 1-Chapter Summary Method. Pages 142-146.**
II. **Method 2-Character Quality Method. Pages 147-159.**
III. **Method 3-Thematic Method. Pages 160-162.**
IV. **Method 4-Biographical Method. Pages 163-175.**
V. **Method 5-Topical Method. Pages 176-179.**
VI. **Method 6-Word Study Method. Pages 180-188.**
VII. **Method 7-Book Background Method. Pages 189-193.**
VIII. **Method 8-Book Survey Method. Pages 194-204.**
IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. VERY SLOW READING- COMPLEX TEXT. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.

I. Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.

II. Method 22-How To Read A Book For Various Books. Pages 341-599.

III. Method 23- Syntopicon Pages 600-641.

IV. Method 24-The Craft of Research. Pages 642-881.

V. Method 25-Research Books can Be Used. Pages 882-897.

VI. Method 26-Investigative Journalism. Pages 898-923.

VII. Method 27-Mixed Methods of Rules of Reading. Pages 924-943.

4. Learning should be iterative. More often than not, learning something challenging takes several attempts. With the Feynman Technique, returning to the source material is an explicit part of the learning process. When gaps in our knowledge arise and our explanations aren't quite right, revisiting our primary and secondary sources can help solidify what we're learning.
5. Getting it right will likely take several iterations. That's a good thing; the more you refine your explanations, the more your understanding will deepen. Learning becomes an iterative process. Rather than viewing learning as one-and-done, this step gives you permission to continuously refresh your knowledge.
6. You're actively engaged. Using sources to polish our own explanations and models is an active process. When we learn passively, committing details to memory is more challenging. When we're actively part of creating our own summaries and reasoning, drawing intentionally from original information to fill our blind spots, we can more readily commit knowledge to our long-term memory.
7. You expand your knowledge base. Paradoxically, the more we learn, the more *our capacity* to learn increases. Looking through a chapter of a textbook might feel like a different language the first time around. The second time it becomes more clear. The third time, with a strong base already, we pick up nuances we couldn't have possibly seen before.

PART 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

Step 57-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 58-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 59-You Are Required To Do The Work For Thinking and Applying Mental Tool Models.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what

happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XIII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIV. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.

XV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XVI. Never use cheap shots to win argument, like logical fallacies.

XVII. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading Deductive and Inductive Methodology.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important?

1. **After Reading, Analyse, Research and Arguing with the text, then I need to Decide and apply the Logic, Mental Models and thinking model that helps to understand the complexity of the world.**
2. **If you can think through things better than others, you'll have fewer problems and more free time. If you can't, you're going to spend a lot of time fixing your mistakes. Good decisions make the future easier, bad ones make it harder.**
3. **The investigators wanted to figure out how today's college students were able to multitask so much more effectively than adults. How do they manage to do it, the researchers asked? The answer, they discovered—and this is by no means what they expected—is that they don't. The enhanced cognitive abilities the investigators expected to find, the mental faculties that enable people to multitask effectively, were simply not there. In other words, people do not multitask effectively. And here's the really surprising finding: the more people multitask, the worse they are, not just at other mental abilities, but at multitasking itself.**
4. **Multitasking, in short, is not only not thinking, it impairs your ability to think. Thinking means concentrating on one thing long enough to develop an idea about it. Not learning other people's ideas, or memorizing a body of information, however much those may sometimes be useful. Developing your own ideas.**
5. **The best way to improve your ability to think is to spend large chunks of time thinking. Immersing ourselves in the problem offers insights that can't be gained otherwise. One way to force yourself to slow down and think is to write. Good writing requires good thinking.**
6. **Good writing, like good thinking, takes time.**

7. **One heuristic to tell how good someone is at making decisions is by how much time they have. The busiest people are often the ones who make the worst decisions. Not only do they have less time to dedicate to thinking about the problem, but they are often busy correcting poor decisions from the past.**
8. **Good thinking is expensive. Bad thinking costs a fortune. Rather than accept that good thinking requires time, most people try to bargain with reality. Unfortunately, that is not how the world works. If you want to think better, schedule time to write out your thoughts.**
9. **Why is important Different type of Thinking to the reality:**
    I. **Using Multidisciplinary Thinking to Approach Problems in a Complex World. Complex outcomes in human systems are a tough nut to crack when it comes to deciding what's really true. Any phenomena we might try to explain will have a host of competing theories, many of them seemingly plausible.**
    II. **Cross-checks" from a variety of sources of data, developing a 3D view of the landscape he's trying to assess**
    III. **So why is it important to be a multidisciplinary thinker? The answer comes from the Austrian philosopher Ludwig Wittgenstein, who said, "To understand is to know what to do." Could there be anything that sounds simpler than that? And yet it's a genius line—"to understand is to know what to do." How many mistakes do you make when you understand something? You don't make any mistakes. Where do mistakes come from? They come from blind spots, a lack of understanding. Why do you need to be multidisciplinary in your thinking? Because as the Japanese proverb says, "The frog in the well knows nothing of the mighty ocean.**
    IV. **You may know everything there is to know about your specialty, your silo, your "well," but how are you going to make any good decisions in life—the complex systems of life, the dynamic system of life—if all you know is one well?**
    V. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring. So out of necessity, we must approach the problem in a different way
    VI. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).

VII. Cross-checks" from a variety of sources of data, developing a 3D view of the landscape he's trying to assess.

VIII. *Look* we can't just rely on "plausible narratives" generated by folks like the historians. There are too many possibilities that could be correct. Nor can we rely purely on correlations (i.e., the rise in literacy statistically tracking the decline in violence) — they don't necessarily offer us a causative explanation. (Does the rise in literacy *cause* less violence, or is it vice versa? Or, does a third factor cause both?) However, if we layer in some other known facts from areas we can experiment on — say, psychology or cognitive neuroscience — we can sometimes establish the causal link we need or, at worst, a better hypothesis of reality.

IX. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.

X. What we end up with is not necessarily a bulletproof explanation, but probably the best we can do if we think carefully. A good cross-disciplinary examination with quantitative and qualitative sources coming into equal play, and a good dose of judgment, can be far more rigorous than the gut instinct or plausible nonsense type stories that many of us lazily spout.

XI. A Word of Caution: Although Pinker's "multiple vertices" approach to problem solving in complex domains can be powerful, we always have to be on guard for phenomena that we simply cannot explain at our current level of competence: We must have a "too hard" pile when competing explanations come out "too close to call" or we otherwise feel we're outside of our circle of competence. Always tread carefully and be sure to follow Darwin's Golden Rule: Contrary facts are more important than confirming ones. Be ready to change your mind, like Darwin, when the facts don't go your way.

XII. Using a true multidisciplinary understanding of things, Peter identifies two often overlooked, parabolic "Big Ideas": 1) Mirrored Reciprocation (go positive and go first) and 2) Compound Interest (being constant). A great "Life Hack" is to simply combine these two into one basic approach to living your life: "Go positive and go first, and be constant in doing it." There may be no better formula for living the best life you could possibly live.

Step 61-Intradisciplinary Thinking

1. **Step 1 Define Intradisciplinary Thinking-Intradisciplinary Thinking. Intradisciplinary Thinking is within a single academic discipline. This is simply thinking within a scope of one academic discipline. Intradisciplinary working is within one discipline. Like a single ingredient, clearly distinguishable. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**
    I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
    II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
    III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
    IV. Listen and Apply The Following Books:
        - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
        - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next

question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle but never fool yourself about where it stands today, and never be afraid to say "I don't know."

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can't be bought. It can't be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They've paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it's difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we've got chauffeur knowledge. They've learned the talk. They may have a big head of hair, they may have fine temper in the voice, they'll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I've just described practically every politician in the United States. We have the people who don't do the work — they pretend. While they've learned to put on a good show, they lack understanding. They can't answer questions that don't rely on memorization. They can't explain things without using jargon or vague terms. They have no idea how things interact. They can't predict the consequences. The problem is that it's difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up

articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking.**
    I. **Thinking Rate.**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking.

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**
         - **The 48 Laws of Power By Robert Greene**
         - **How to Think By John Dewey**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**

- **Thermodynamics.**
- **Inertia.**
- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**

- **Supporting Idea: Complex Adaptive Systems.**
- **Critical mass.**
- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Thinking through Method.
X. Thinking design through the literature.
XI. Seeking Wisdom_ From Darwin to Munger.
XII. Thinking, Fast and Slow.
XIII. Investing_ The Last Liberal Art.
XIV. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XV. General Mental Models.
XVI. The sense of style _ the thinking person's guide to writing in the 21st century.
XVII. Extreme Ownership.
XVIII. Good Strategy and Bad Strategy.
XIX. The Complete Art of War.
XX. Mental Models.
XXI. Rules of Thinking.
XXII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Developing critical thinking.**
XV. **critical-thinking-logic-amp-problem-solving-the-ultimate-guide-to-better-thinking-systematic-problem-solving-and-making-impeccable-decisions-with-secret-tips-to-detect-logical-fallacies.**
XVI. **The Art of problem solving**
XVII. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies**

XVIII.Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.

XIX.Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.

XX.Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.

XXI.Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.

XXII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XXIII.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XXIV.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXV.CRITICAL THINKING_ Consider the Verdict

XXVI.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXVII.Thinker's guide to Analytic Thinking.

XXVIII.Socratic Method Today.

XXIX.Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles

XXX.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXXI.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXXII.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**

- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**
- **Science and Superstition.**

E. Mathematical Mental Model.

I. Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.

II. Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.

III. Listen, Use and Apply Basic Mathematics By Tussy For Thinking.

IV. Listen, Use and Apply Calculus By Anton BAivens For Thinking.

V. Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.

VI. Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.

VII. Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.

VIII. Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.

IX. Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.

F. Thinking Like Mental Tools.

I. **How to Think Like a Mathematician.**
II. **How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.**
III. **How to Think Like Leonardo da Vinci.**
IV. **Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.**
V. **Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.**
VI. **Think Like an Entrepreneur, Act Like a CEO.**
VII. **How Successful People Think_ Change Your Thinking, Change Your Life.**
VIII. **How Professors Think.**
IX. **Learning To Think Like Lawyer.**
X. **Mastermind_ How to Think Like Sherlock Holmes.**
XI. **How to Think Like Scientist.**
XII. **How Doctors Think.**
XIII. **How to Think Like Bill Gates.**
XIV. **How to Think Like Sherlock.**
XV. **How to think like Leonardo Da Vinci _ seven steps to genius every day.**
XVI. **Think Like A Lawyer.**
XVII. **Act Like a Leader, Think Like a Leader.**
XVIII. **How not to be wrong. The power of mathematical thinking .**
XIX. **Think like entrepreneur.**
XX. **Think Like Attorney.**
XXI. **Think like anthropologist.**
XXII. **Think Like Super GM.**
XXIII. **Think Like Stoicism.**
XXIV. **Think Like Rocket Scientist.**
XXV. **Think Like Grandmaster,**

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**
XVIII. **System of logic By John Stuart Milton**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.

I. **Encyclopedia of Automotive Engineering.**
II. **Encyclopedia of Information Science and Technology.**
III. **Encyclopedia of RF and Microwave Engineering.**
IV. **Encyclopedia-Environmental-Science.**
V. **Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.**
VI. **Encyclopedia of Aerospace Engineering.**

T. Psychology.

I. **Handbook of Psychology Volume 1-12.**
II. **Encyclopedia of Psychology.**

U. Philosophy.

I. **Routledge Encyclopedia of Philosophy.**
II. **Stanford Encyclopedia of Philosophy.**

V. Strategem.

I. **Treasons, Strategems and Spoils.**
II. **36 Strategens.**
III. **The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?**
IV. **Stratagem, deception and surprise in war.**
V. **THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.**
VI. **Stratagem and spoils.**
VII. **STRATAGEM Deception and Surprise in War.**
VIII. **Secrecy and stratagem understanding Chinese strategic culture.**
IX. **Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.**
X. **The Thirty-Six Strategies of Ancient China.**

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 62 -Multidisciplinary Thinking

1. **Step 1 Define Multidisciplinary Thinking. Multidisciplinary thinking taking combination of various disciplines that maintain their unique perspective unchanged. They share a connection that us not collaborative, but collective and can work together to create a more complicated picture of Reality. The topic of analysis will best expose its different characteristics by exploring different perspectives, using the techniques and observations provided by variety of developed disciplines. Multidisciplinarity is characterised within the literature as the least integrative from of integrated research—yet, equally, it is arguably the most attainable. Multidisciplinarity features several academic disciplines in a thematically based investigation with multiple goals—essentially, studies "co-exist in a context" . While researchers aim to share knowledge and compare results from the studies there is no attempt to cross boundaries or generate new integrative knowledge. Each member is able to contribute a professional perspective on the issue. Thus the advantage of this approach is that, while the research approaches are disciplinary, the different perspectives on the issue can be gathered into one report for assessment. There is some debate on the extent to which research is coordinated and integrated. While some suggest that multidisciplinary research is coordinated, but not integrated; others contend that there is no coordination, but there is integration at a low level. In general, it is hard to imagine that the research is not, in some way coordinated whilst maintaining even a slight degree of coherence, but it may indeed not be integrated. Multidisciplinary working brings disciplines together so they can learn from each other, drawing on the mix of disciplinary knowledge. It's like a salad: the original ingredients are intact, but the flavours begin to blend. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a

clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**
         - **The 48 Laws of Power By Robert Greene**
         - **How to Think By John Dewey**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**

- **Thermodynamics.**
- **Inertia.**
- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**

- **Supporting Idea: Complex Adaptive Systems.**
- **Critical mass.**
- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Thinking through Method.
X. Thinking design through the literature.
XI. Seeking Wisdom_ From Darwin to Munger.
XII. Thinking, Fast and Slow.
XIII. Investing_ The Last Liberal Art.
XIV. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XV. General Mental Models.
XVI. The sense of style _ the thinking person's guide to writing in the 21st century.
XVII. Extreme Ownership.
XVIII. Good Strategy and Bad Strategy.
XIX. The Complete Art of War.
XX. Mental Models.
XXI. Rules of Thinking.
XXII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Developing critical thinking.**
XV. **critical-thinking-logic-amp-problem-solving-the-ultimate-guide-to-better-thinking-systematic-problem-solving-and-making-impeccable-decisions-with-secret-tips-to-detect-logical-fallacies.**
XVI. **The Art of problem solving**
XVII. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies**

XVIII.Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.

XIX.Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.

XX.Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.

XXI.Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.

XXII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XXIII.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XXIV.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXV.CRITICAL THINKING_ Consider the Verdict

XXVI.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXVII.Thinker's guide to Analytic Thinking.

XXVIII.Socratic Method Today.

XXIX.Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles

XXX.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXXI.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXXII.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**

- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**
- **Science and Superstition.**

E. Mathematical Mental Model.

I. Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.

II. Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.

III. Listen, Use and Apply Basic Mathematics By Tussy For Thinking.

IV. Listen, Use and Apply Calculus By Anton BAivens For Thinking.

V. Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.

VI. Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.

VII. Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.

VIII. Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.

IX. Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.

F. Thinking Like Mental Tools.

I. How to Think Like a Mathematician.

II. How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.

III. How to Think Like Leonardo da Vinci.

IV. Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.

V. Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.

VI. Think Like an Entrepreneur, Act Like a CEO.

VII. How Successful People Think_ Change Your Thinking, Change Your Life.

VIII. How Professors Think.

IX. Learning To Think Like Lawyer.

X. Mastermind_ How to Think Like Sherlock Holmes.

XI. How to Think Like Scientist.

XII. How Doctors Think.

XIII. How to Think Like Bill Gates.

XIV. How to Think Like Sherlock.

XV. How to think like Leonardo Da Vinci _ seven steps to genius every day.

XVI. Think Like A Lawyer.

XVII. Act Like a Leader, Think Like a Leader.

XVIII. How not to be wrong. The power of mathematical thinking .

XIX. Think like entrepreneur.

XX. Think Like Attorney.

XXI. Think like anthropologist.

XXII. Think Like Super GM.

XXIII. Think Like Stoicism.

XXIV. Think Like Rocket Scientist.

XXV. Think Like Grandmaster,

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**
XVIII. **System of logic By John Stuart Milton**

H. Risk Management Mental Tools.
    I. The-essentials-of-risk-management.
    II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.
    III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.
    IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.
    V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.
    VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.
    IX. Enterprise_risk_management.
    X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.
    XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.
    XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.
    XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.
    XVI. Implementing Enterprise Risk Management.
    XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.
    XVIII. Principles of Risk Management and Insurance.
    XIX. Quantitative Financial Risk Management.
    XX. CFA Risk Management.
    XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategem.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 63 - CrossDisciplinary Thinking

1. **Step 1 Define CrossDisciplinary Thinking. Crossdisciplinary thinking applies to several types of cross border interactions, looking at one discipline from an other's viewpoint. You will be working together to move knowledge from one discipline to the other. For example, views from political science are being used in fictional literature to understand political dispute. As part of the current university, cross-disciplinarity has a long background, particularly among disciplines that share borders or those with a shared focus. Physics and astronomy disciplines demonstrate this background. Physic studies a law that determines the universe; these laws extend to non-Earthly contexts (to the best of modern knowledge). Physics and astronomy programs are therefore usually located in the same academic department, providing for cross-disciplinary interaction. Crossdisciplinary working views one discipline from the frame of reference of another. It's like lots of different ingredients on a plate, but without chopping them up and mixing them. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**
    I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
    II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
    III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
    IV. Listen and Apply The Following Books:
        - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**

- **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a

clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**
         - **The 48 Laws of Power By Robert Greene**
         - **How to Think By John Dewey**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**

- **Thermodynamics.**
- **Inertia.**
- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**

- **Supporting Idea: Complex Adaptive Systems.**
- **Critical mass.**
- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Thinking through Method.
X. Thinking design through the literature.
XI. Seeking Wisdom_ From Darwin to Munger.
XII. Thinking, Fast and Slow.
XIII. Investing_ The Last Liberal Art.
XIV. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XV. General Mental Models.
XVI. The sense of style _ the thinking person's guide to writing in the 21st century.
XVII. Extreme Ownership.
XVIII. Good Strategy and Bad Strategy.
XIX. The Complete Art of War.
XX. Mental Models.
XXI. Rules of Thinking.
XXII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Developing critical thinking.**
XV. **critical-thinking-logic-amp-problem-solving-the-ultimate-guide-to-better-thinking-systematic-problem-solving-and-making-impeccable-decisions-with-secret-tips-to-detect-logical-fallacies.**
XVI. **The Art of problem solving**
XVII. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies**

XVIII.Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.

XIX.Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.

XX.Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.

XXI.Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.

XXII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XXIII.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XXIV.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXV.CRITICAL THINKING_ Consider the Verdict

XXVI.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXVII.Thinker's guide to Analytic Thinking.

XXVIII.Socratic Method Today.

XXIX.Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles

XXX.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXXI.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXXII.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**

- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**
- **Science and Superstition.**

E. Mathematical Mental Model.

I. Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.

II. Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.

III. Listen, Use and Apply Basic Mathematics By Tussy For Thinking.

IV. Listen, Use and Apply Calculus By Anton BAivens For Thinking.

V. Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.

VI. Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.

VII. Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.

VIII. Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.

IX. Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.

F. Thinking Like Mental Tools.

I. How to Think Like a Mathematician.

II. How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.

III. How to Think Like Leonardo da Vinci.

IV. Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.

V. Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.

VI. Think Like an Entrepreneur, Act Like a CEO.

VII. How Successful People Think_ Change Your Thinking, Change Your Life.

VIII. How Professors Think.

IX. Learning To Think Like Lawyer.

X. Mastermind_ How to Think Like Sherlock Holmes.

XI. How to Think Like Scientist.

XII. How Doctors Think.

XIII. How to Think Like Bill Gates.

XIV. How to Think Like Sherlock.

XV. How to think like Leonardo Da Vinci _ seven steps to genius every day.

XVI. Think Like A Lawyer.

XVII. Act Like a Leader, Think Like a Leader.

XVIII. How not to be wrong. The power of mathematical thinking .

XIX. Think like entrepreneur.

XX. Think Like Attorney.

XXI. Think like anthropologist.

XXII. Think Like Super GM.

XXIII. Think Like Stoicism.

XXIV. Think Like Rocket Scientist.

XXV. Think Like Grandmaster,

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**
XVIII. **System of logic By John Stuart Milton**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
   I. Encyclopedia of Automotive Engineering.
   II. Encyclopedia of Information Science and Technology.
   III. Encyclopedia of RF and Microwave Engineering.
   IV. Encyclopedia-Environmental-Science.
   V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
   VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
   I. Handbook of Psychology Volume 1-12.
   II. Encyclopedia of Psychology.

U. Philosophy.
   I. Routledge Encyclopedia of Philosophy.
   II. Stanford Encyclopedia of Philosophy.

V. Strategem.
   I. Treasons, Strategems and Spoils.
   II. 36 Strategens.
   III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
   IV. Stratagem, deception and surprise in war.
   V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
   VI. Stratagem and spoils.
   VII. STRATAGEM Deception and Surprise in War.
   VIII. Secrecy and stratagem understanding Chinese strategic culture.
   IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
   X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 64-Interdisciplinary Thinking

1. **Step 1 Define Interdisciplinary Thinking.”Interdisciplinary” comes from the process of merging and integrating different disciplines together with their methodologies and presumptions. It includes crossing the formal borders between sciences and combining their methods in favor of a common purpose. ” Methodologies and assumptions belonging to different disciplines are connected and modified in order to adapt to the needs of the research, creating new tools which allow for the investigation of difficult subjects that surpass the possibilities of a single discipline. In the field of architecture, for instance, complex topics such as SDGs, urban transitional, sustainability, and design imply various approaches that combine chemistry, drafting for design, engineering design, fundamentals of physics, architectural illumination and electrical systems. Interdisciplinarity may be regarded as a step up from multidisciplinarity. Interdisciplinary studies focus on addressing specific ‘real world’ system problems and, as a result, the research process forces participants (from a variety of unrelated disciplines) to cross boundaries to create new knowledge. Essentially the major difference from multidisciplinarity lies in the *level of integration and cooperation* as these projects seek to bridge disciplinary viewpoints and potentially enable the examination of existing accumulated knowledge from the perspective of a neighboring discipline. Huutoniemi *et al.* provide a relatively comprehensive typology of interdisciplinarity along with specific indicators for research teams to grasp on to. At the same time, Schmidt outlines the importance of a basic literacy in the philosophy of science related to doing such work as well as the kinds of interdisciplinarity. The necessity of bridging disciplinary viewpoints generally (as with transdisciplinarity) stems from the need to address complex “problems that involve an interface of human and natural systems” and, as such, the integration of natural and social scientists is standard practice for interdisciplinary research. This approach involves bringing people and ideas together from different disciplines to jointly frame a problem, agree on a methodological approach, and analyze data. Thus interdisciplinary research requires a much more collaborative approach to problem formulation and methodological development than multidisciplinary research. Interdisciplinary**

working starts to take a new form, integrating knowledge and methods from different disciplines and synthesising into a new whole. It's like a stew: the original ingredients are still partly distinguishable, but the overall is a blended pot of mixed flavours. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the

complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**
         - **The 48 Laws of Power By Robert Greene**
         - **How to Think By John Dewey**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**

- **Thermodynamics.**
- **Inertia.**
- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**

- Supporting Idea: Complex Adaptive Systems.
- Critical mass.
- Emergence.
- Supporting Idea: Chaos Dynamics.
- Irreducibility.
- Law of Diminishing Returns.

- Mathematics.
  - Supporting Idea: Distribution.
  - Compounding.
  - Supporting Idea; Network Effect.
  - Sampling.
  - Randomness.
  - Supporting idea: Pareto Principle.
  - Regression to the mean.
  - Multiplying by ZERO.
  - Equivalence.
  - Supporting idea: order of Magnitude.
  - Surface Area.
  - Global and local Maxima.

IV. The Great Mental Models By Tommy Tedford.
- First Principles Mental model.
- Classical Condition.
- Cognitive Biases.
- Circle Of Competence Mental Model.
- Eisenhower Matrix.

V. 100 Mental Models- Be Rational by Wisdom Theory.
- Philosophy.
  - Meaning Of Life.
  - Stoicism.
  - Cave of plato.
  - Golden Rule.
  - Constructivism.

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Thinking through Method.
X. Thinking design through the literature.
XI. Seeking Wisdom_ From Darwin to Munger.
XII. Thinking, Fast and Slow.
XIII. Investing_ The Last Liberal Art.
XIV. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XV. General Mental Models.
XVI. The sense of style _ the thinking person's guide to writing in the 21st century.
XVII. Extreme Ownership.
XVIII. Good Strategy and Bad Strategy.
XIX. The Complete Art of War.
XX. Mental Models.
XXI. Rules of Thinking.
XXII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Developing critical thinking.**
XV. **critical-thinking-logic-amp-problem-solving-the-ultimate-guide-to-better-thinking-systematic-problem-solving-and-making-impeccable-decisions-with-secret-tips-to-detect-logical-fallacies.**
XVI. **The Art of problem solving**
XVII. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies**

XVIII.Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.

XIX.Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.

XX.Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.

XXI.Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.

XXII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XXIII.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XXIV.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXV.CRITICAL THINKING_ Consider the Verdict

XXVI.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXVII.Thinker's guide to Analytic Thinking.

XXVIII.Socratic Method Today.

XXIX.Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles

XXX.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXXI.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXXII.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**

- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**
- **Science and Superstition.**

E. Mathematical Mental Model.

I. Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.

II. Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.

III. Listen, Use and Apply Basic Mathematics By Tussy For Thinking.

IV. Listen, Use and Apply Calculus By Anton BAivens For Thinking.

V. Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.

VI. Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.

VII. Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.

VIII. Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.

IX. Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.

F. Thinking Like Mental Tools.

I. **How to Think Like a Mathematician.**
II. **How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.**
III. **How to Think Like Leonardo da Vinci.**
IV. **Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.**
V. **Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.**
VI. **Think Like an Entrepreneur, Act Like a CEO.**
VII. **How Successful People Think_ Change Your Thinking, Change Your Life.**
VIII. **How Professors Think.**
IX. **Learning To Think Like Lawyer.**
X. **Mastermind_ How to Think Like Sherlock Holmes.**
XI. **How to Think Like Scientist.**
XII. **How Doctors Think.**
XIII. **How to Think Like Bill Gates.**
XIV. **How to Think Like Sherlock.**
XV. **How to think like Leonardo Da Vinci _ seven steps to genius every day.**
XVI. **Think Like A Lawyer.**
XVII. **Act Like a Leader, Think Like a Leader.**
XVIII. **How not to be wrong. The power of mathematical thinking .**
XIX. **Think like entrepreneur.**
XX. **Think Like Attorney.**
XXI. **Think like anthropologist.**
XXII. **Think Like Super GM.**
XXIII. **Think Like Stoicism.**
XXIV. **Think Like Rocket Scientist.**
XXV. **Think Like Grandmaster,**

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**
XVIII. **System of logic By John Stuart Milton**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategem.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 65-Transdisciplinary Thinking

1. **Step 1 Define Transdisciplinary Thinking. Transdisciplinary For one of the first times was stated in a 1973 OECD report on environmental education. Transdisciplinarity describes a study that focuses on issues that cross the borders of two or even more disciplines "when a common set of axioms prevail, related to but lying beyond and complementing traditional disciplines. With the other word, principles or techniques originally developed by one discipline but now commonly used by others. Transdisciplinarity is probably the most desirable and yet difficult to obtain form of integrated research. Some researchers are, in fact, skeptical about whether it can be achieved at all. For example, Pohl observes that the extent of the requirements for transdisciplinary research suggest that it is to some extent "a 'megalomaniac' endeavour." In addition, Tress *et al.* note that, despite the best intentions, "Transdisciplinary landscape research is an exception, even interdisciplinarity is seldom reached." Such studies seek a transcendence of disciplinary perspectives (in some cases "redrawing the disciplinary map" into a broader framework in "true systemic fashion" that involves practical engagement with "local and regional issues of concern". In this sense transdisciplinarity is the highest form of integrated project, involving not only multiple disciplines, but also multiple *non-academic participants* (e.g., land managers, user groups, the general public) in a manner that combines interdisciplinarity with participatory approaches. Walter *et al.* suggest that transdisciplinary research is characterised by "a process of collaboration between scientists and non-scientists on a specific real world problem" and combines scientific research with the generation of decision-making capacity for the involved stakeholders or as Schmidt describes it a "problem with the problems". While Mobjörk *et al.* suggest that transdisciplinarity can be divided into "consulting" (stakeholders are consulted but not incorporated in the research process) and "participatory" (stakeholders are incorporated and considered equally valuable) forms, we argue that non-participatory forms of transdisciplinarity are, in fact, interdisciplinary as transdisciplinary approaches are widely defined by their engagement of non-scientists in the research process. The variety included in many transdisciplinary frameworks is largely the result of the strong problem solving**

objectives of the research and the need for flexible methodologies in transdisciplinary research is driven by this problem solving approach as "methodologies employed in transdisciplinary research needs to correspond to and reflect the problem and context under investigation". To ensure that all relevant disciplines are represented within transdisciplinary projects, a pluralistic (rather than unitary) approach to methodology is standard. This focus on the problem, rather than the disciplines excludes the possibility of unidirectional research. As Hadorn *et al.* observe, within a transdisciplinary environment, no single discipline has intellectual precedence. In fact, some researchers go so far as to equate transdisciplinarity with holism, arguing that "It solves disagreements and differences in knowledge and scientific approaches through dialectic thinking, not majority rule, tradition or compromise" [5] or that it is "a different manner of seeing the world, more systematic and more holistic". As such, Rapport suggests that "the essential element of transdisciplinarity is 'transcendence'—a creative process whereby a framework for characterizing larger level processes transcends frameworks used to characterize the parts". (For more on creativity and serendipity involved in research that reaches beyond a single discipline.) Political ecology is an example of a transdisciplinary sub-discipline that has emerged from the transcendence of a number of disciplines—and has existed under the umbrella of a larger disciplinary body (Geography) since the 1970s though others associate with interdisciplinary work . In promoting a holistic perspective, transdisciplinarity requires considerable effort on the part of engaged researchers to open up their research to alternative ways of thinking, or, as Giri suggests to "overcome one's disciplinary chauvinism" and develop "an openness to perspectives of other disciplines". The adoption of a holistic perspective leads to another key feature of transdisciplinarity—that it has high aims of reconstituting and rearranging the nature of disciplinary knowledge thus creating, through fusion across arbitrary intellectual boundaries, new synthesized disciplines with which to address the real-world problems at hand explicitly through collaboration. The demands placed on researchers to collaborate and 'overcome chauvinism' means that transdisciplinarity, of all the integrated research forms, has a strong focus on the building of personal relationships and joint understandings. Establishing trust and understanding between researchers within the projects is thus a key objective of building

transdisciplinary capacity. Transdisiplinary working produces a new, novel form or way of working beyond the original disciplinary boundaries. It's like a cake: you can no longer see the form of the ingredients as they have taken on a different shape and flavour.Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the

complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**
         - **The 48 Laws of Power By Robert Greene**
         - **How to Think By John Dewey**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**

- **Thermodynamics.**
- **Inertia.**
- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**

- **Supporting Idea: Complex Adaptive Systems.**
- **Critical mass.**
- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Thinking through Method.
X. Thinking design through the literature.
XI. Seeking Wisdom_ From Darwin to Munger.
XII. Thinking, Fast and Slow.
XIII. Investing_ The Last Liberal Art.
XIV. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XV. General Mental Models.
XVI. The sense of style _ the thinking person's guide to writing in the 21st century.
XVII. Extreme Ownership.
XVIII. Good Strategy and Bad Strategy.
XIX. The Complete Art of War.
XX. Mental Models.
XXI. Rules of Thinking.
XXII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Developing critical thinking.**
XV. **critical-thinking-logic-amp-problem-solving-the-ultimate-guide-to-better-thinking-systematic-problem-solving-and-making-impeccable-decisions-with-secret-tips-to-detect-logical-fallacies.**
XVI. **The Art of problem solving**
XVII. **Critical thinking, Logic & Problem Solving_ The Ultimate Guide to Better Thinking, Systematic Problem Solving and Making Impeccable Decisions with Secret Tips to Detect Logical Fallacies**

XVIII.Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.

XIX.Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.

XX.Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.

XXI.Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.

XXII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XXIII.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XXIV.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXV.CRITICAL THINKING_ Consider the Verdict

XXVI.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXVII.Thinker's guide to Analytic Thinking.

XXVIII.Socratic Method Today.

XXIX.Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles

XXX.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXXI.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXXII.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**

- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**
- **Science and Superstition.**

E. Mathematical Mental Model.

I. Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.

II. Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.

III. Listen, Use and Apply Basic Mathematics By Tussy For Thinking.

IV. Listen, Use and Apply Calculus By Anton BAivens For Thinking.

V. Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.

VI. Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.

VII. Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.

VIII. Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.

IX. Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.

F. Thinking Like Mental Tools.

I. How to Think Like a Mathematician.

II. How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.

III. How to Think Like Leonardo da Vinci.

IV. Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.

V. Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.

VI. Think Like an Entrepreneur, Act Like a CEO.

VII. How Successful People Think_ Change Your Thinking, Change Your Life.

VIII. How Professors Think.

IX. Learning To Think Like Lawyer.

X. Mastermind_ How to Think Like Sherlock Holmes.

XI. How to Think Like Scientist.

XII. How Doctors Think.

XIII. How to Think Like Bill Gates.

XIV. How to Think Like Sherlock.

XV. How to think like Leonardo Da Vinci _ seven steps to genius every day.

XVI. Think Like A Lawyer.

XVII. Act Like a Leader, Think Like a Leader.

XVIII. How not to be wrong. The power of mathematical thinking .

XIX. Think like entrepreneur.

XX. Think Like Attorney.

XXI. Think like anthropologist.

XXII. Think Like Super GM.

XXIII. Think Like Stoicism.

XXIV. Think Like Rocket Scientist.

XXV. Think Like Grandmaster,

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**
XVIII. **System of logic By John Stuart Milton**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategem.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 66-Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**
2. **Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
    - **First, he would learn everything he could about it and prepare physically as best as possible.**
    - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
    - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
    - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
    - **Side note: visualization is great, but it's no substitute for preparation.**

Step 67-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding

Step 68-Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**
2. **Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
    - **First, he would learn everything he could about it and prepare physically as best as possible.**
    - **Once the physical prep was done, he'd take care of the mental prep with visualisation.**
    - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
    - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
    - **Side note: visualisation is great, but it's no substitute for preparation.**

Step 69-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 8: Simplify Explanation and Creating Analogies

Step 70-Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious.

I. **Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.**

   A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

   B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

   C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

PART 9: Reflect, Refine and Simplify

Step 71-Reflect, Refine, and Simplify.

I. **Reflect, Refine, and Simplify.**

   A. **Only when you can explain the subject in simple terms do you** understand it.

   B. Simple is beautiful.

   C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

   D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

   E. Go back to the source material, reviewing the parts you don't quite understand yet.

   F. Repeat until you have a simple explanation.

PART 10: Organise And Review.

Step 72 - Organise And Review.

I. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

PART 11: Deep Work and Application

Step 73 - The Focus to Say No

1. The difference between average results and exceptional ones is what you avoid. Saying no to mediocre opportunities is easy. Saying no to good opportunities is hard.
2. We all have the same number of hours in a week. What separates people is how they use them. You can do anything, but you can't do everything.
3. The Hidden Cost of Yes
    I. Saying yes creates an obligation. Saying yes commits you to something. The things we say yes to have a habit of growing.
    II. Saying yes should make the future easier, not harder.
    III. Saying yes to a request feels good in the moment. So we say yes to things we know won't move us forward. We say yes because we don't want to hurt someone's feelings. We say yes to be polite. We say yes out of obligation. We say yes because we 'should.'
4. When dealing with anyone other than friends or family, saying yes should ultimately lead to results.
5. Saying yes carries a cost that is often paid in the days, weeks, or even years ahead. What starts as a single meeting becomes a weekly one. A small project becomes a large one. A one-time event with colleagues turns into a weekly session.
6. Be quick to say no and slow to say yes. Saying yes consumes time, saying no creates time. Never say yes on the spot. Always give yourself some space. Make it a rule. Tell people. That's what Daniel Kahneman does. When he's on the phone he says 'my rule is I never say yes on the phone. I'll email you later after I think about it more.' And when I asked him how often he later says yes, he responded 'rarely.'

Step 74-Half Life: The Decay of Knowledge and What to Do About It.

1. The Decay of Knowledge and What to Do About It.

I. The Basics-A half-life is the time taken for something to halve its quantity. The term is most often used in the context of radioactive decay, which occurs when unstable atomic particles lose energy. Twenty-nine elements are known to be capable of undergoing this process. Information also has a half-life, as do drugs, marketing campaigns, and all sorts of other things. We see the concept in any area where the quantity or strength of something decreases over time. Radioactive decay is random, and measured half-lives are based on the most probable rate. We know that a nucleus will decay at some point; we just cannot predict when. It could be anywhere between instantaneous and the total age of the universe. Although scientists have defined half-lives for different elements, the exact rate is completely random. Half-lives of elements vary tremendously. For example, carbon takes millions of years to decay; that's why it is stable enough to be a component of the bodies of living organisms. Different isotopes of the same element can also have different half-lives. Three main types of nuclear decay have been identified: alpha, beta, and gamma. Alpha decay occurs when a nucleus splits into two parts: a helium nucleus and the remainder of the original nucleus. Beta decay occurs when a neutron in the nucleus of an element changes into a proton. The result is that it turns into a different element, such as when potassium decays into calcium. Beta decay also releases a neutrino — a particle with virtually no mass. If a nucleus emits radiation without experiencing a change in its composition, it is subject to gamma decay. Gamma radiation contains an enormous amount of energy.

II. The Discovery of Half-Lives. The discovery of half-lives (and alpha and beta radiation) is credited to Ernest Rutherford, one of the most influential physicists of his time. Rutherford was at the forefront of this major

discovery when he worked with physicist Joseph John Thompson on complementary experiments leading to the discovery of electrons. Rutherford recognized the potential of what he was observing and began researching radioactivity. Two years later, he identified the distinction between alpha and beta rays. This led to his discovery of half-lives, when he noticed that samples of radioactive materials took the same amount of time to decay by half. By 1902, Rutherford and his collaborators had a coherent theory of radioactive decay (which they called "atomic disintegration"). They demonstrated that radioactive decay enabled one element to turn into another — research which would earn Rutherford a Nobel Prize. A year later, he spotted the missing piece in the work of the chemist Paul Villard and named the third type of radiation gamma. Half-lives are based on probabilistic thinking. If the half-life of an element is seven days, it is most probable that half of the atoms will have decayed in that time. For a large number of atoms, we can expect half-lives to be fairly consistent. It's important to note that radioactive decay is based on the element itself, not the quantity of it. By contrast, in other situations, the half-life may vary depending on the amount of material. For example, the half-life of a chemical someone ingests might depend on the quantity. In biology, a half-life is the time taken for a substance to lose half its effects. The most obvious instance is drugs; the half-life is the time it takes for their effect to halve, or for half of the substance to leave the body. The half-life of caffeine is around 6 hours, but (as with most biological half-lives) numerous factors can alter that number. People with compromised liver function or certain genes will take longer to metabolize caffeine. Consumption of grapefruit juice has been shown in some studies to slow caffeine metabolism. It takes around 24 hours for a dose of caffeine to fully leave the body. The half-lives of drugs vary from a few seconds to several weeks. To complicate matters, biological half-lives vary for different parts of the body. Lead has a half-life of around a month in the blood, but a decade in bone. Plutonium in bone has a half-life of a century — more than double the time for the liver. Marketers refer to the half-life of a campaign — the time taken to receive half the total responses. Unsurprisingly, this time varies among media. A paper catalog may have a half-life of about three weeks, whereas a tweet might have a half-life of a few minutes. Calculating

this time is important for establishing how frequently a message should be sent.

III. **The Half-Life of Facts-In *The Half-Life of Facts: Why Everything We Know Has an Expiration Date*, Samuel Arbesman (see our Knowledge Project interview) posits that facts decay over time until they are no longer facts or perhaps no longer complete. According to Arbesman, information has a predictable half-life: the time taken for half of it to be replaced or disproved. Over time, one group of facts replaces another. As our tools and knowledge become more advanced, we can discover more — sometimes new things that contradict what we thought we knew, sometimes nuances about old things. Sometimes we discover a whole area that we didn't know about. The rate of these discoveries varies. Our body of engineering knowledge changes more slowly, for example, than does our body of psychological knowledge. Arbesman studied the nature of facts. The field was born in 1947, when mathematician Derek J. de Solla Price was arranging a set of philosophical books on his shelf. Price noted something surprising: the sizes of the books fit an exponential curve. His curiosity piqued, he began to see whether the same curve applied to science as a whole. Price established that the quantity of scientific data available was doubling every 15 years. This meant that some of the information had to be rendered obsolete with time. Scientometrics shows us that facts are always changing, and much of what we know is (or soon will be) incorrect. Indeed, much of the available published research, however often it is cited, has never been reproduced and cannot be considered true. In a controversial paper entitled "Why Most Published Research Findings Are False," John Ioannides covers the rampant nature of poor science. Many researchers are incentivized to find results that will please those giving them funding. Intense competition makes it essential to find new information, even if it is found in a dubious manner. Yet we all have a tendency to turn a blind eye when beliefs we hold dear are disproved and to pay attention only to information confirming our existing opinions. As an example, Arbesman points to the number of chromosomes in a human cell. Up until 1965, 48 was the accepted number that medical students were taught. (In 1953, it had been declared an established fact by a leading cytologist). Yet in 1956,**

two researchers, Joe Hin Tjio and Albert Levan, made a bold assertion. They declared the true number to be 46. During their research, Tjio and Levan could never find the number of chromosomes they expected. Discussing the problem with their peers, they discovered they were not alone. Plenty of other researchers found themselves two chromosomes short of the expected 48. Many researchers even abandoned their work because of this perceived error. But Tjio and Levan were right (for now, anyway). Although an extra two chromosomes seems like a minor mistake, we don't know the opportunity costs of the time researchers invested in faulty hypotheses or the value of the work that was abandoned. It was an emperor's-new-clothes situation, and anyone counting 46 chromosomes assumed they were the ones making the error. As Arbesman puts it, facts change incessantly. Many of us have seen the ironic (in hindsight) doctor-endorsed cigarette ads from the past. A glance at a newspaper will doubtless reveal that meat or butter or sugar has gone from deadly to saintly, or vice versa. We forget that laughable, erroneous beliefs people once held are not necessarily any different from those we now hold. The people who believed that the earth was the center of the universe, or that some animals appeared out of nowhere or that the earth was flat, were not stupid. They just believed facts that have since decayed. Arbesman gives the example of a dermatology test that had the same question two years running, with a different answer each time. This is unsurprising considering the speed at which our world is changing. As Arbesman points out, in the last century the world's population has swelled from 2 billion to 7 billion, we have taken on space travel, and we have altered the very definition of science. The order Arbesman describes mimics the decay of radioactive elements. Whenever new information is discovered, we can be sure it will break down and be proved wrong at some point. As with a radioactive atom, we don't know precisely when that will happen, but we know it will occur at some point. If we zoom out and look at a particular body of knowledge, the random decay becomes orderly. Through probabilistic thinking, we can predict the half-life of a group of facts with the same certainty with which we can predict the half-life of a radioactive atom. The problem is that we rarely consider the half-life of information. Many people assume that whatever they learned in school remains true years or decades

later. Medical students who learned in university that cells have 48 chromosomes would not learn later in life that this is wrong unless they made an effort to do so. OK, so we know that our knowledge will decay. What do we do with this information? Arbesman says, Simply knowing that knowledge changes like this isn't enough. We would end up going a little crazy as we frantically tried to keep up with the ever changing facts around us, forever living on some sort of informational treadmill. But it doesn't have to be this way because there are patterns. Facts change in regular and mathematically understandable ways. And only by knowing the pattern of our knowledge evolution can we be better prepared for its change. Recent initiatives have sought to calculate the half-life of an academic paper. Ironically, academic journals have largely neglected research into how people use them and how best to fund the efforts of researchers. Research by Philip Davis shows the time taken for a paper to receive half of its total downloads. Davis's results are compelling. While most forms of media have a half-life measured in days or even hours, 97 percent of academic papers have a half-life longer than a year. Engineering papers have a slightly shorter half-life than other fields of research, with double the average (6 percent) having a half-life of under a year. This makes sense considering what we looked at earlier in this post. Health and medical publications have the shortest overall half-life: two to three years. Physics, mathematics, and humanities publications have the longest half-lives: two to four years.

IV. The Half-Life of Secrets-According to Peter Swire, writing in "The Declining Half-Life of Secrets," the half-life of secrets (by which Swire generally means classified information) is shrinking. In the past, a government secret could be kept for over 25 years. Nowadays, hacks and leaks have shrunk that time considerably. Swire writes: Swire notes that there are three main causes: "the continuing effects of Moore's Law — or the idea that computing power doubles every two years, the sociology of information technologists, and the different source and methods for signals intelligence today compared with the Cold War." One factor is that spreading leaked information is easier than ever. In the past, it was often difficult to get information published. Newspapers feared legal repercussions if they shared classified information. Anyone can now release secret information,

often anonymously, as with WikiLeaks. Governments cannot as easily rely on media gatekeepers to cover up leaks. Rapid changes in technology or geopolitics often reduce the value of classified information, so the value of some, but not all, classified information also has a half-life. Sometimes it's days or weeks, and sometimes it's years. For some secrets, it's not worth investing the massive amount of computer time that would be needed to break them because by the time you crack the code, the information you wanted to know might have expired. (As an aside, if you were to invert the problem of all these credit card and SSN leaks, you might conclude that reducing the value of possessing this information would be more effective than spending money to secure it.)

V. **The Half-Lives of Careers and Business Models. The issue with information having a half-life should be obvious. Many fields depend on individuals with specialized knowledge, learned through study or experience or both. But what if those individuals are failing to keep up with changes and clinging to outdated facts? What if your doctor is offering advice that has been rendered obsolete since they finished medical school? What if your own degree or qualifications are actually useless? These are real problems, and knowing about half-lives will help you make yourself more adaptable. While figures for the half-lives of most knowledge-based careers are hard to find, we do know the half-life of an engineering career. A century ago, it would take 35 years for half of what an engineer learned when earning their degree to be disproved or replaced. By the 1960s, that time span shrank to a mere decade. Today that figure is probably even lower. In 1966 paper entitled "The Dollars and Sense of Continuing Education," Thomas Jones calculated the effort that would be required for an engineer to stay up to date, assuming a 10-year half-life. According to Jones, an engineer would need to devote at least five hours per week, 48 weeks a year, to stay up to date with new advancements. A typical degree requires about 4800 hours of work. Within 10 years, the information learned during 2400 of those hours would be obsolete. The five-hour figure does not include the time necessary to revise forgotten information that is still relevant. A 40-year career as an engineer would require 9600 hours of independent study. Keep in mind that Jones made his calculations in the 1960s. Modern estimates**

place the half-life of an engineering degree at between 2.5 and 5 years, requiring between 10 and 20 hours of study per week. Welcome to the treadmill, where you have to run faster and faster so that you don't fall behind. Unsurprisingly, putting in this kind of time is simply impossible for most people. The result is an ever-shrinking length of a typical engineer's career and a bias towards hiring recent graduates. A partial escape from this time-consuming treadmill that offers little progress is to recognize the continuous need for learning. If you agree with that, it becomes easier to place time and emphasis on developing heuristics and systems to foster learning. The faster the pace of knowledge change, the more valuable the skill of learning becomes. A study by PayScale found that the median age of workers in most successful technology companies is substantially lower than that of other industries. Of 32 companies, just six had a median worker age above 35, despite the average across all workers being just over 42. Eight of the top companies had a median worker age of 30 or below — 28 for Facebook, 29 for Google, and 26 for Epic Games. The upshot is that salaries are high for those who can stay current while gaining years of experience. In a similar vein, business models have ever shrinking half-lives. The nature of capitalism is that you have to be better last year than you were this year — not to gain market share but to maintain what you already have. If you want to get ahead, you need asymmetry; otherwise, you get lost in trench warfare. How long would it take for half of Uber or Facebook's business models to be irrelevant? It's hard to imagine it being more than a couple of years or even months. In *The Business Model Innovation Factory: How to Stay Relevant When the World Is Changing*, Saul Kaplan highlights the changing half-lives of business models. In the past, models could last for generations. The majority of CEOs oversaw a single business for their entire careers. Business schools taught little about agility or pivoting. Kaplan writes:During the industrial era once the basic rules for how a company creates, delivers, and captures value were established[,] they became etched in stone, fortified by functional silos, and sustained by reinforcing company cultures. All of a company's DNA, energy, and resources were focused on scaling the business model and beating back competition attempting to do a better job executing the same business model. Companies with nearly identical business models slugged

it out for market share within well-defined industry sectors. Those days are over. The industrial era is not coming back. The half-life of a business model is declining. Business models just don't last as long as they used to. In the twenty-first century business leaders are unlikely to manage a single business for an entire career. Business leaders are unlikely to hand down their businesses to the next generation of leaders with the same business model they inherited from the generation before.

VI. The Burden of Knowledge-The flip side of a half-life is the time it takes to double something. A useful guideline to calculate the time it takes for something to double is to divide 70 by the rate of growth. This formula isn't perfect, but it gives a good indication. Known as the Rule of 70, it applies only to exponential growth when the relative growth rate remains consistent, such as with compound interest. The higher the rate of growth, the shorter the doubling time. For example, if the population of a city is increasing by 2 percent per year, we divide 70 by 2 to get a doubling time of 35 years. The rule of 70 is a useful heuristic; population growth of 2 percent might seem low, but your perspective might change when you consider that the city's population could double in just 35 years. The Rule of 70 can also be used to calculate the time for an investment to double in value; for example, $100 at 7 percent compound interest will double in just a decade and quadruple in 20 years. The average newborn baby doubles its birth weight in under four months. The average doubling time for a tumor is also four months. We can see how information changes in the figures for how long it takes for a body of knowledge to double in size. The figures quoted by Arbesman (drawn from *Little Science, Big Science … and Beyond* by Derek J. de Solla Price) are compelling, including:also gives figures for the time taken for the available knowledge in a particular field to double, including:The doubling of knowledge increases the learning load over time. As a body of knowledge doubles so does the cost of wrapping your head around what we already know. This cost is the burden of knowledge. To be the best in a general field today requires that you know more than the person who was the best only 20 years ago. Not only do you have to be better to be the best, but you also have to be better just to stay in the game. The corollary is that because there is so much to know, we

specialize in very niche areas. This makes it easier to grasp the existing body of facts, keep up to date on changes, and rise to the level of expert. The problem is that specializing also makes it easier to see the world through the narrow focus of your specialty, makes it harder to work with other people (as niches are often dominated by jargon), and makes you prone to overvalue the new and novel.

Step 75 - Power of I do not know

1. It's ok to say I don't know.
2. Just because you vomit out an opinion on something doesn't make it so. Too often we fail to consider that maybe what we're reading or writing is wrong. We're scared to say I don't know.
3. Do Not Have the Opinion and do not make any judgement about Anything, I see and hear, If I did not work Hard to have an opinion. I need to Read, Analyse, Research the topic from every angle, so that I can have an opinion or Make Judgement on the topic.

Step 76-Application

Record Application

A. Read or listen 25min and 5min break.

- Read or Listen 20 pages an Hour according Mortimer Adler.

B. Read or Listen following Tools to Use Application.

1. Folder Application+ Introduction to Hermeneutics Chapter 12.
2. Speed of Tool Books:Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed to Find Application.

C. Speed of Audiobook.

- Analysing audiobook listen between 75 words per minute to 285 words per minute or listen between 0.5-1.9 times speed to **Use Application.**

D. Depending on which topics you have chosen, the best way to integrate them is to try and find points of convergence (meet).

E. Six Stages of learning transfers:

- Non Specific transfer-Everything we learn is acquired as result of what we have learned in past.
- Application transfer-involves applying the knowledge.
- Context Transfer-involves use of your knowledge for situation that is slightly different from the one in which you initially acquired it. Example non- academic writing requires linguistic skills that are somewhat different and persisting with formal language.
- Near Transfer-continue to apply your acquired knowledge in situation that are similar to the one where you were originally exposed to it. Example car with manual transmission use the knowledge to use truck with manual transmission.
- Far Transfer-test your ability to take a piece of learned knowledge and apply it in some context that is entirely dissimilar to the one where you acquired.
- Displacement or creative transfer-takes the integrative skills we acquired in previous step to the next level. Example: you jump in the air and feel yourself being pulled down due to gravitational force. Later you enter an elevator and feel yourself accelerated upwards at similar rate as the one that pulled you down while jumping. If you connect the dots, the upward acceleration from lift and the downward pull of gravity are actually the same thing. Ask yourself questions.

- Does this subject connect well to another domain of knowledge that related or unrelated?
- Where else have I come across this idea?
- How difficult was it for me to grasp this?
- Can I break down into smaller parts?
- How would I explain this to a child?
- Why is this important to know?
- What questions does this raise for me?
- What, if anything surprises me about this?

F. Use 5W and 1H
    1. Who?
    2. What?
    3. When?
    4. Where?
    5. Why?
    6. How?
    7. So What?

G. What does the writer wants me to learn?
    1. Philosophy.
    2. Motivation.
    3. Finance.
    4. Economics.
    5. Philosophy.
    6. Linguistics.
    7. Language.
    8. Logic.
    9. Reasoning.
    10. Morality.
    11. Ethics.
    12. Dilemmas.
    13. Liberty.
    14. Freedom.
    15. Freedom of speech.

16. Archeology.
17. Religion.
18. Humanity.
19. Human condition.
20. God.
21. Human behaviour.
22. Values.
23. Challenges.
24. beliefs.
25. Atheism.
26. Beauty and etc.

H. Mental Models in Applying The Book In Life.

1. **Confirmation bias:** Which parts of this book am I ignoring? Does this book confirm my opinions? (Okay, but does it *actually* affirm your beliefs or are you just seeing what you want to see? If you cannot think of a single point in the book that you disagreed with, confirmation bias is perchance distorting your reasoning.).
2. **Bayesian updating:** What opinions should I change in light of this book? How can I update my worldview using the information in it? Keep in mind the words of John Maynard Keynes: “When the facts change, I change my mind. What do you do, sir?
3. **Pareto principle:** Which parts of this book are most important and contain the most information? If I had to cut 99% of the words in this book, what would I leave? Many authors have to reach a certain word or page count, resulting in pages (or even entire chapters) containing fluff and padding. Even the best non-fiction books are often longer than is imperative to convey their ideas. (Note that the Pareto principle is less applicable for fiction books.).
4. **Leverage:** How can I use lessons from this book to gain a disproportionate advantage? Can I leverage this new knowledge in a tangible way.
5. **Incentives:** What motivates the characters or the author? What are they seeking? What is their purpose? Here’s how Kurt Vonnegut described the importance of incentives in books: “When I used to teach creative writing, I would tell the students to make their characters want something right away – even if it’s only a glass of water. Characters paralyzed by the meaninglessness of modern life still have to drink water from time to time.

6. **Availability bias:** Are the books I have recently read affecting how I perceive this one? How are my neoteric experiences shaping my reading? Am I assigning undue importance to parts of this book because they are salient and memorable?
7. **Stereotyping tendency:** Am I unconsciously fitting the author, characters, or book in general into a particular category? Or is the author stereotyping their characters? Remember, there is no such thing as a good stereotype.
8. **Social proof:** How is social proof — the number of copies sold, bestseller status, the opinions of others — affecting my perception of this book? Is the author using social proof to manipulate readers? It is not unusual for authors to buy their way onto bestseller lists, providing social proof which then leads to substantial sales. As a result, mediocre books can end up becoming popular. It's a classic case of the emperor having no clothes, which smart readers know to look out for.
9. **Narrative instinct:** Is the author distorting real events to form a coherent narrative? This is common in biographies, memoirs, and historical texts. In *The Value of Narrativity in the Representation of Reality,* Hayden White explains our tendency to meld history into a narrative: "So natural is the impulse to narrate, so inevitable is the form of narrative for any report of the way things really happened, that narrativity could appear problematical only in a culture in which it was absent… narrative is a metacode, a human universal… Narrative becomes a problem only when we wish to give to real events the form of story… This value attached to narrativity in the representation of real events arises out of a desire to have real events display the coherence, integrity, fullness, and closure of an image of life that is and can only be imaginary. The notion that sequences of real events possess the formal attributes of the stories we tell about imaginary events could only have its origin in wishes, daydreams, reveries. Does the world really present itself to perception in the form of well-made stories, with central subjects, proper beginnings, middles, and ends, and a coherence that permits us to see "the end" in every beginning? Or does it present itself more in the forms that the annals and chronicle suggest, either as mere sequence without beginning or end or as sequences of beginnings that only terminate and never conclude? And does the world, even the social world, ever really come to us as already narrativized, already "speaking itself" from beyond the horizon of our capacity to make scientific sense of it? Or is the fiction of such a world, a world capable of speaking itself and of displaying itself as a form of a story, necessary for the establishment

of that moral authority without which the notion of a specifically social reality would be unthinkable?"

10. **Survivorship bias:** Is this (non-fiction) book a representation of reality or is the author failing to account for base rates? Survivorship bias is abundant in business, self-help, and biographical books. A particular case of a successful individual or business might be held as the rule, rather than the exception.
11. **Utility:** If a book offers advice, does it have practical applications? At what point do diminishing returns set in?

I. How to I know that this idea applicable in reality?
    1. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. The problem is we often think the world *should* work differently than it does. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal.
    2. Part of the answer is we don't listen to the feedback of reality. When we don't get the outcome we're seeking, the last place we look is with our actions. It's too easy to wiggle out of responsibility by blaming others and circumstances. It's not that this approach is entirely ineffective. We eventually get the job half done in twice the time. The person working with the world, however, gets the job fully done in half the time.
    3. The most common source of feedback is people not reality. One problem with feedback from people is that it's hard to give someone else high quality feedback. Think about it. People will tell you a few helpful things but they'll often avoid the big thing that's holding you back. They don't want to hurt your feelings. They want you to like them. That's not the biggest problem. The biggest problem is that people rarely know much more than you do. If they had all the answers, they'd get better results.
    4. Another form of people feedback comes from groups, institutions, and society. This is the way things have been done. And while there might be good reason for doing things the same way they've always been done, if you take your feedback from these folks, you'll incrementally improve what's already exists rather than use first principles to design something new. If exiting institutions knew what they were doing, we wouldn't have startups or bankruptcy lawyers.
    5. How do we identify how the world really works?Outcome over ego. You are accountable for your outcomes. When you take responsibility for your outcomes

you get feedback from reality. When you get feedback from reality, you adjust your behaviour.

J. Applying Lessons from the Past

1. “History is written by the winners” is the popular view. But your winner may not be my winner. A lot depends on the narrative you are trying to build.
2. History is rewritten all the time. Sometimes it is rewritten because new information has come to light, perhaps from an archeological find or previously classified documents. When this happens, it is exciting. We joyfully anticipate that more information will deepen our understanding. But rewriting frequently happens in the service of building a cultural or national narrative. We highlight bits of the past that support our perceived identities and willfully ignore the details that don’t fit. We like our history uncomplicated. It’s hard for us to understand our groups or our countries, and by extension ourselves, as both good and not-good at the same time.
3. Culture is a collective memory. It’s the interwoven stories that we use to explain who we are as nations, organizations, or just loosely formed groups.“Collective memory is more about the present than the past because it is integral to how the group sees itself.” And “while collective memory is usually grounded in fact, it need not be.”
4. We have seen how people justify all kinds of mistakes to preserve the personal narratives they are invested in, and groups also engage in this behavior. Countries rewrite their histories, from the textbook up, to support how they see themselves now. Instinctively we may recoil from this idea, believing that it’s better to turn over all the rocks and confront what is lurking underneath. However, as MacMillan writes, “It can be dangerous to question the stories people tell about themselves because so much of our identity is both shaped by and bound up with our history. That is why dealing with the past, in deciding on which version we want, or on what we want to remember and to forget, can become so politically charged.”
5. MacMillan warns that the danger of abusing history is that it “flattens out the complexity of human experience and leaves no room for different interpretations of the past.” Which leaves us asking, What do we want from history? Do we want to learn from it, with the hopes that in doing so we will avoid mistakes by understanding the experiences of others? Or do we want to practice self-

justification on a national level, reinforcing what we already believe about ourselves to justify what we did and what we are doing? After all, “you could almost always find a basis for your claims in the past if you looked hard enough.”

6. If we selectively use the past only to reinforce our claims in the present, then the situation becomes precarious when there is pressure to change. Instead of looking as objectively as possible at history, welcoming historians who challenge us, we succumb to confirmation bias, allowing only those interpretations that are consistent with the narrative we are invested in. Consider what MacMillan writes about nationalism, which “is a very late development indeed in terms of human history.”
7. When we selectively reach back into the past to justify claims in the present, we reduce the complexity of history and of humanity. This puts us in an awkward position because the situations we are confronted with are inherently complex. If we cut ourselves off from the full scope of history because it makes us uncomfortable, or doesn’t fit with the cultural narrative in which we live, we reduce our ability to learn from the past and apply those lessons to the situations we are facing today. MacMillan says, “There are also many lessons and much advice offered by history, and it is easy to pick and choose what you want. The past can be used for almost anything you want to do in the present. We abuse it when we create lies about the past or write histories that show only one perspective. We can draw our lessons carefully or badly. That does not mean we should not look to history for understanding, support and help; it does mean that we should do so with care.”
8. We need to accept that people can do great things while still having flaws. Our heroes don’t have to be perfect, and we can learn just as much from their imperfections as from their achievements. We have to allow that there are at least two sides to every story, and we have to be willing to listen to both. There are no conflicts in which one side doesn’t feel morally justified in their actions; that’s why your terrorist can be my freedom fighter. History can be an important part of bridging this divide only if we are willing to lift up all the rocks and shine our lights on what is lurking underneath.
9. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.

K. How can this idea be applied in real life?
L. Has this idea stood the test of time?
M. What steps do I need to take to apply this idea in reality?
    1. We have to contextualise the knowledge. When does it work?
    2. When doesn't it work? Where can I apply it?
    3. What are the key variables?

N. In what area of life this idea applicable?
O. Is this idea still applicable in present time?
P. What does this idea improves in my life?
Q. What of it?
R. What follows?
S. What difference does it make?
T. What was my favourite part of the book? Why?
U. Who was the favourite character? Why?
V. What was the most interesting thing I learned from the book?
W. Would I have ended the book differently? Did it end the way I thought it would?
X. If I could change one thing in the book, what would it be?
Y. Do I know example of someone who is like one of the characters in the story?
Z. If I could have conversation with one of the characters in the story, which character would I choose and what I talk about it?
AA. What am I believe?
BB. How will I reveal my faith and my knowledge through my actions?
CC. What I understood about Jesus, Father and Holy Spirit from the Bible? And what I understood about other things from the books?
DD. How that encourage me?
EE. What I could learn from this?
FF. Do I find bad/good examples from the books?
GG. Do I find any commandment that I must obey?
HH. Do I find any warnings?
II. Do I find any promise?
JJ. Do I find the sin that I have to repent?
KK. What truth s God have revealed to me?
LL. What truth about others have revealed to me?
MM. How can I do practically?

NN. What the main though do I have to remember?

OO. How can I show my life fruit, character, love, faith and maturity in my daily life?

PP. How do I have desire to be discipline character in fruit, faith that he is ejected to authorised and filled with Christ?

QQ. What a thing is blocking me from God's work?

RR. How can I contribute with God work and discipline my self to complete the work?

SS. What can I do that God's work will be functional and better and stronger and faster even then. When I have doubt, uncertainty and stress?

TT. What can I do practical?

UU. What example can I be? To learn and teach others?

VV. Question that I do not understand in the paragraph?

WW. Don't Overheard Complaining, not even to yourself. If you have fewer Opinion, if you just accept things as they are, you have less to complain about

XX. So step by step action by action, no-one can stop you from that. Focus on the part of the things that is up to you, and trust , if you follow the process that more times than not, you will get the outcome you want.

YY. Worst Enemy of The Person is her his own Tongue, as the person will always boast or Talk out their ideas and thoughts. Always observe the person, as the person will always boast about their ideas, winning and thoughts, and do not interrupt the person. Bible tells about tongue in James 3: It corrupts the whole person, sets the whole course of his life on fire, and is itself set on fire by hell. but no man can tame the tongue. It is a restless evil, full of deadly poison. With the tongue we praise our Lord and Father, and with it we curse men, who have been made in God's likeness.

ZZ. How To Put Ideas into Practice. How The Idea can be put into practice.

AAA. Do not watch what they talking, but watch what they are doing, to determine what type of person she/he is.

BBB. We needs to work on the things that we not good at, and not just things that we are strong at. This would make you better as whole.

CCC. If the Product is for Free, then You are the Product for the company

DDD. There is no free Lunch, if somebody offers something for free, then there is something behind that offer.

How Will I Add This Information In My Own Life.

How Will I Apply This Information In My Life.

Step 77-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 12: Deep Work and Decision Making

Step 78-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 79-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 80-You Have Required To Do The Work For Decision Making.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XIII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIV. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.

XV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XVI. Never use cheap shots to win argument, like logical fallacies.

XVII. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 81-Use Rules of Reading for Decision Making

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Decision Making.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **VERY SLOW READING- COMPLEX TEXT. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books To My Decision

Step 82-Decision Making Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 10, before looking into Decision Making.**
2. **Listen, Follow and Apply the following Books.**
   A. **Critical Thinking_ Tools for Taking Charge of Your Professional and Personal Life.**
   B. **Decisive_ How to Make Better Choices in Life and Work.**
   C. **The Decision Book_ Fifty Models for Strategic Thinking.**
   D. **The Thinking Manager's Toolbox_ Effective Processes for Problem Solving and Decision Making.**
   E. **Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.**
   F. **How To Read A Book**
   G. **Socratic Method**

Step 83 - Decision Making

Decision Making Tools

Getting the World to Do the Work for You

"What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson."

— Joseph Tussman

The key to getting what you want out of life is to identify how the world works and align yourself accordingly. The problem is we often think the world *should* work differently than it does. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal.

Why don't we align ourselves with reality?

Part of the answer is we don't listen to the feedback of reality. When we don't get the outcome we're seeking, the last place we look is with our actions. It's too easy to wiggle out of responsibility by blaming others and circumstances. It's not that this approach is entirely ineffective. We eventually get the job half done in twice the time. The person working with the world, however, gets the job fully done in half the time.

The most common source of feedback is people not reality. One problem with feedback from people is that it's hard to give someone else high quality feedback. Think about it. People will tell you a few helpful things but they'll often avoid the big thing that's holding you back. They don't want to hurt your feelings. They want you to like them. That's not the biggest problem. The biggest problem is that people rarely know much more than you do. If they had all the answers, they'd get better results.

Another form of people feedback comes from groups, institutions, and society. This is the way things have been done. And while there might be good reason for doing things the same way they've always been done, if you take your feedback from these folks, you'll incrementally improve what's already exists rather than use first principles to design something new. If exiting institutions knew what they were doing, we wouldn't have startups or bankruptcy lawyers.

How do we identify how the world really works?

Outcome over ego. You are accountable for your outcomes. When you take responsibility for your outcomes you get feedback from reality. When you get feedback from reality, you adjust your behavior.

The Four Villains of Decision Making

1. **Narrow Framing**: "… the tendency to define our choices too narrowly, to see them in binary terms. We ask, "Should I break up with my partner or not?" instead of "What are the ways I could make this relationship better?"
2. **Confirmation Bias**: "When people have the opportunity to collect information from the world, they are more likely to select information that supports their preexisting attitudes, beliefs, and actions." We pretend we want the truth, yet all we really want is reassurance.
3. **Short-term Emotion**: "When we've got a difficult decision to make, our feelings churn. We replay the same arguments in our head. We agonize about our circumstances. We change our minds from day to day. If our decision was represented on a spreadsheet, none of the numbers would be changing—there's no new information being added—but it doesn't feel that way in our heads."
4. **Overconfidence**: "People think they know more than they do about how the future will unfold."

Why We Fail At Effective Decision Making

1. **We're unintentionally stupid.** I like to think that I'm rational and capable of interpreting all information in a non-biased way but that's a dream. Cognitive biases are great at explaining how our evolutionary programming leads us astray. Knowledge of these biases in advance rarely helps us make better decisions. There are, however, many easily recognizable situations that increase the odds we're about to do something stupid. Whether we're tired, overly focused on a goal, rushing, distracted, operating in a group, or under the influence of a group, we're more prone to stupidity.2

2. We have the wrong information. Making decisions with the wrong assumptions or facts is likely to lead to disaster.

3. We use the wrong model. We use mental models to make decisions. The quality of those models determines the quality of our thinking. There are a variety of reasons that we use false, incomplete, or incorrect models. Novices are prone to using models that the expert knows are incomplete or irrelevant. The odds of employing the wrong models increase as the pace of environmental change increases.

4. We fail to learn. We all know the person that has 20 years of experience but it's really the same year over and over. Well, that person is sometimes us. If we don't understand how we learn, we're likely to make the same mistakes over and over.

5. Looking over doing good. Our evolutionary programming conditions us to do what's easy over what's right. After all it's often easier to signal being virtuous than actually being virtuous. We unconsciously make choices based on optics, politics, and defendability. We hate criticism and seek the validation of our peers and superiors. We often want to feel good about ourselves first and have the outcome we desire second.

How We Make Decisions

When was the last time you thought about how you make decisions?

If you're like most people, you've never been explicitly taught how to make effective decisions. You make decisions like a golfer who never took any lessons: miserable with the state of your game and yet not seeking to learn a better swing, and instead hoping for the best every time you lift the club. Hoping that this time your choice will finally work out.

In the early 1980s, Charlie Munger and his partner Warren Buffett realized that a Savings & Loan operation they owned, as with the rest of the industry, was doomed to fail miserably due to forces outside of their control. At a time when almost none of their peers were taking action, they changed course dramatically, massively reducing the effect of the bank's failure on the rest of their business holdings. These two men knew they had to act much differently than their peers.

It worked: The S&L industry collapsed, yet Munger and Buffett escaped with barely a scratch. They saved themselves a great deal of stress and financial pain by applying a uniquely effective system of organized common sense. In hindsight, it seems like an obvious good decision; at the time, it seemed odd and unusual.

The lesson for us is that the people making consistently good decisions take advantage of how the world works. That's wisdom.

Real knowledge of the art of decision making, which remains true across time and circumstances, eras and epochs, can help increase the odds that we get what we want and reduce costly mistakes.

While everyone else is guessing, falling into old patterns, blindly following cognitive biases, we can be clear-headed and laser-focused.

That's what Farnam Street is all about.

Here are some examples of applying — or failing to apply — knowledge about how the world really works.

- It doesn't matter how smart you are if you don't realize where things are additive and where they are multiplicative. Nikola Tesla failed to understand Multiplication by Zero when he failed to realize that poor relations with others affected his life. While the Serbian-American was a brilliant inventor, he had difficulty relating to others, which made him difficult to work with. This problem cost him a Nobel Prize and a fortune that today would likely have made him the richest man in the world.
- While we all rely on maps, which are reductions of complexity, to make decisions, they are not always accurate. General George S. Patton Jr. understood that the map is not the territory. When he visited the troops near Coutances, he found them

sitting on the side of the road, studying a map. Responding to Patton's inquiry as to why they had not crossed the Seine, the troops informed him that they were studying the map and could not find a safe place to wade across. Patton informed them that he had just waded across it and it was not more than two feet deep.

- While we all like to be in the sexy industries, that desire shows an under-appreciation for the laws of thermodynamics. Smart companies like Berkshire Hathaway, guided by legendary investor Warren Buffett, understand that contrast is important. Sexy internet businesses are rarely effective, no matter how good they are, because the others are nearly just as good. What you want is contrast — to be the big fish in a small pond. And when you analyze the types of investments he's made over the years, that's what you find. If you're going to compete with people, you want to compete with people who are way less sophisticated than you.
- Understanding and applying the mental model of relativity helped Michael Abrashoff take the worst-performing ship in the US Pacific Fleet and turn it into the best. In his book, *It's Your Ship,* he wrote: "The most important skill a skipper can have is the ability to see through the eyes of the crew."

Questions to Ask

Decision-Making Checklist

- Is this an example of survivorship bias?
- Am I confusing the factor for selection with the result?
- Am I seeing a pattern where there isn't one?
- Am I changing my behaviour or opinion because others are doing/acting/thinking this way? Because of social proof?
- Am I looking at only the future costs and benefits? Disregard any costs to date.
- Do I feel obligated to return a favour here? Have they done something for me that might make me subject to reciprocity?
- Can I find disconfirming evidence for my current hypothesis? What are the limitations of this evidence? How might someone with the opposing viewpoint interpret this evidence?
- Is some sort of authority figure exerting an influence on me?
- What am I judging this is relation to? How would this look in a different context, compared to something else? What sort of small, gradual changes might I be missing?
- Am I overvaluing evidence because of my own experience or the ease with which I can recall it? Who can I get an opinion from who has a different expertise and experience than me?
- What evidence would I have to see to make a judgement about whether this situation is improving? What are clear and verifiable milestones?
- Am I trying to shape this into a story? What is my confidence level that I actually understand this?
- What predictions am I making about this? How confident am I? What historical decisions do I have recorded that might indicate my prediction level?
- What is the pessimistic scenario here? How far off is my own prediction from this scenario?
- Does this person (or do I) truly understand this situation? Or is it outside my circle of competence?
- What specific things can I actually control in this situation?
- What incentives are at play here? How do they likely affect the behaviour of those involved?
- Could this situation be explained by random variation, or regression to the mean?

- Was the process behind this good or bad, regardless of the result? Do I have enough evidence to evaluate the effectiveness of the process? What information did I have at the time?
- How can I reduce the number of choices here? What are the key factors I want to evaluate?
- Do I like this person? Is that affecting my decision-making process?
- Am I valuing this too highly because it is already mine? What does the market think?
- How unlikely is this event? Could it be caused by random chance?
- What is the devil's advocate view of this situation? Have we expressed our opinions independently?
- What is the rational response based on the probability and consequences of this event? What is the expected value or risk?
- Have I assessed this option based solely on costs and benefits? How would I evaluate it if it were available in abundance?
- What is the base rate in this situation? Is there an analogous situation I can rely on?
- What factors are independent and which are dependent in this situation?
- What anchors might I be using here when I shouldn't be?
- What are the objective upsides and downsides here? Am I overweighting the downside, or the fear of loss?
- Are we behaving differently here because we are a group? How are we evaluating individual performance?
- Is there an exponential factor at play here? Or is it linear?
- Am I competing with someone here? Is that changing my behaviour? What is my "line in the sand" if I'm bidding for something? Can I avoid an auction situation?
- What are the broader factors influencing the situation here? What degree of influence do they really have?
- Is there actually a link between these two factors? How do we know that one causes the other? How do we know they are linked at all?
- What are the limits of this piece of information? Is it causing me to look at other things favourably or unfavourably?
- If I try and evaluate from an outside view, what are all the possible outcomes for this situation? What are the associated risks with each path?
- What incentives is this person subject to? Is there a downside if the prediction is wrong? How good is his success rate?

- Am I dealing with a subset here? Am I trying to fit a plausible story to the situation?
- What if I present this situation in the opposite way? How does that change my perception?
- Am I just trying to act here? What if I just wait? Will I be able to better assess my options?
- Am I avoiding a particular path because the consequences are bad, but less bad than inaction?
- What bluntly honest friends, or enemies, could I ask for an honest assessment of strengths and weaknesses?
- Will this lead to long-term or short-term happiness? Would this lead to something guaranteed to be negative?
- How does this sample affect the conclusions I'm trying to make? What would be the ideal sample?
- Am I transferring qualities between things that are unrelated? Am I shooting the messenger?
- Is the sample size enough to make a conclusion about luck vs. skill here? Are there a large number of players here? (Likely to cause random winners). Can I disprove my conclusion?
- Am I trying to reinterpret things to maintain a previous attitude or belief?
- Am I making an impulsive decision right now? Am I playing the long game or short game?
- Is the reasoning behind this sound, or am I just going along with a "because" reason?
- Am I making this decision fresh? Am I well-rested and well-fed?
- Do I have a connection to this in some way?
- Does the average mean anything in this situation? What is the actual underlying distribution?
- Are financial incentives crowding my judgement? Are they crowding other incentives for the people involved here?
- What is being said here? Is it actually useful?
- How are these factors grouped? How has it changed? Have the groups been rearranged to manipulate the averages?
- What information is actually useful here? Am I falsely increasing my confidence levels because of additional, but useless information?

- Am I overvaluing parts of this because I put effort into them? What is the value of the result, discounting the process and effort put in?
- Is this sample size sufficient to draw conclusions? Or am I in fact extrapolating too far from a small sample?
- What expectations am I holding about this situation? Are they appropriate? What is the worst-case scenario?
- Am I evaluating this situation rationally? Or using intuition?
- Could this information apply to anyone? Are there any negatives, or are they all positive traits?
- Is this the best use of my time?
- Are my feelings about this subject, topic, or my current feelings contributing to my evaluation?
- Am I being critical with myself? How would I regard these internal observations if they were coming from someone else?
- Am I just trying to keep options open? What should I focus on *not* pursuing?
- Am I overvaluing this option because of the novelty?
- What is the source of this argument or opinion?
- What is the next best alternative to this option?
- Am I avoiding an option out of fear or jealousy of someone or something outdoing me?
- Am I overvaluing this information because it was the first I'd heard? Or because I heard it more recently?
- Am I overvaluing my own ideas? Who can give me an objective opinion?
- Have I put us in a position to guard against negative Black Swans? And take advantage of positive Black Swans?
- Am I within my circle of competence? Or am I trying to transfer knowledge from one domain to another?
- How do other people feel? What are their opinions? Have I truly gathered information about them?
- Do I know for sure this happened, or am I relying on memory?
- What groups are currently affecting my thinking? Have I sought opinions from outside my group?
- Am I falsely relying on probabilities just to avoid ambiguity?
- Would I make this same decision from a different position, if the status quo was different?

- Am I avoiding a decision out of fear of regret?
- Am I attributing undue weight to this factor because of its prominence? Which discreet factors am I failing to value?
- Is my behaviour different because I won this money or got something for free?
- Am I avoiding this because it's unpleasant? Can I set a deadline to force myself to get this done? Can I make a public commitment?
- Am I envious of something here?
- What are the facts and statistical distribution behind this story? Is the human aspect causing bias?
- Am I focusing on something here? What am I missing? What other scenarios are possible?
- What is the past performance behind this claim? Are there other situations similar to this where I can find data? What safeguards do I have in place?
- Is this a complex situation, or could I rely some on my emotions?
- What similar projects can I look at for objective data on my situation? What does the pre-mortem look like here?
- Have I gathered a number of sufficiently different perspectives to see how experts with different tools would solve this?
- Have I gone into enough detail in the plan on how to deal with this situation?
- Is there an illusion of skill here? Is this likely due to chance, or is there a demonstrated record of success?
- What features or factors am I missing here? Why do these factors exist instead of nothing?
- What has been cherry-picked here? Where are the negative results?
- Am I falsely attributing this to a single cause?
- What test subjects or information has been removed from the sample?
- Is this valuable information or just news?

List of Decision Making Tools

1. Overcome these villains and make better choices.
    - **You encounter a choice. But narrow framing makes you miss options. So Widen Your Options. How can you expand your set of choices?**
    - **You analyze your options. But the confirmation bias leads you to gather self-serving information. So, Reality-Test Your Assumptions. How can you get outside your head and collect information you can trust?**
    - **You make a choice. But short-term emotion will often tempt you to make the wrong one. So Attain Distance Before Deciding. How can you overcome short-term emotion and conflicted feelings to make better choices?**
    - **Then you live with it. But you'll often be overconfident about how the future will unfold. So Prepare to Be Wrong. How can we plan for an uncertain future so that we give our decisions the best chance to succeed?**

2. Inversion

Inversion is a powerful tool to improve your thinking because it helps you identify and remove obstacles to success. The root of inversion is "invert," which means to upend or turn upside down. As a thinking tool it means approaching a situation from the opposite end of the natural starting point. Most of us tend to think one way about a problem: forward. Inversion allows us to flip the problem around and think backward. Sometimes it's good to start at the beginning, but it can be more useful to start at the end.

Spending time thinking about the opposite of what you want doesn't come naturally to most people. And yet many of the smartest people in history, have done this naturally.

Inversion helps improve understanding of the problem. By forcing you to do the work necessary to have an opinion you're forced to consider different perspectives.

3. Second Order Thinking

Almost everyone can anticipate the immediate results of their actions. This type of first-order thinking is easy and safe but it's also a way to ensure you get the same results that everyone else gets. Second-order thinking is thinking farther ahead and thinking holistically. It requires us to not only consider our actions and their immediate consequences, but the subsequent effects of those actions as well. Failing to consider the second and third order effects can unleash disaster.

Second-order thinking is more deliberate. It is thinking in terms of interactions and time, understanding that despite our intentions our interventions often cause harm. Second order thinkers ask themselves the question "And then what?" This means thinking about the consequences of repeatedly eating a chocolate bar when you are hungry and using that to inform your decision. If you do this you're more likely to eat something healthy.

First-level thinking looks similar. Everyone reaches the same conclusions. This is where things get interesting. The road to out-thinking people can't come from first-order thinking. It must come from second-order thinking. Extraordinary performance comes from seeing things that other people can't see.

Improving Your Ability To Think.

Here are three ways you can use to put second order thinking into practice today.

1. Always ask yourself "And then what?"
2. Think through time — What do the consequences look like in 10 minutes? 10 months? 10 Years? 1.
3. Create templates like the second image above with 1st, 2nd, and 3rd order consequences. Identify your decision and think through and write down the consequences. If you review these regularly you'll be able to help calibrate your thinking.
4. (Bonus) If you're using this to think about business decisions, ask yourself how important parts of the ecosystem are likely to respond. How will employees deal with this? What will my competitors likely do? What about my suppliers? What about the regulators? Often the answer will be little to no impact, but you want to understand the immediate and second-order consequences before you make the decision.

A lot of extraordinary things in life are the result of things that are first-order negative, second order positive. So just because things look like they have no immediate payoff, doesn't mean that's the case. All it means is that you'll have less competition if the second

and third order consequences are positive because everyone who thinks at the first order won't think things through.

Second-order thinking takes a lot of work. It's not easy to think in terms of systems, interactions, and time. However, doing so is a smart way to separate yourself from the masses.

4. **The map is not the Territory**

The map of reality is not reality. Even the best maps are imperfect. That's because they are reductions of what they represent. If a map were to represent the territory with perfect fidelity, it would no longer be a reduction and thus would no longer be useful to us. A map can also be a snapshot of a point in time, representing something that no longer exists. This is important to keep in mind as we think through problems and make better decisions.

5. **How Not to Be Stupid-stupidity as overlooking or dismissing conspicuously crucial information.**

6. Apply Rational Decision Process

***1. Define the problem**. Accurate judgment is required to identify and define the problem. Managers often err by (a) defining the problem in terms of a proposed solution, (b) missing a bigger problem, or (c) diagnosing the problem in terms of its symptoms. Your goal should be to solve the problem not just eliminate its temporary symptoms.*

***2. Identify the criteria.** Most decisions require you to accomplish more than one objective. When buying a car, you may want to maximize fuel economy, minimize cost, maximize comfort, and so on. The rational decision maker will identify all relevant criteria in the decision-making process.*

***3. Weight the criteria.** Different criteria will vary in importance to a decision maker. Rational decision makers will know the relative value they place on each of the criteria identified. The value may be specified in dollars, points, or whatever scoring system makes sense.*

***4. Generate alternatives**. The fourth step in the decision-making process requires identification of possible courses of action. Decision makers often spend an inappropriate amount of search time seeking alternatives, thus creating a barrier to effective decision making. An optimal search continues only until the cost of the search outweighs the value of added information.*

***5. Rate each alternative** on each criterion. How well will each of the alternative solutions achieve each of the defined criteria? This is often the most difficult stage of the decision-making process, as it typically requires us to forecast future events. The rational decision maker carefully assesses the potential consequences on each of the identified criteria of selecting each of the alternative solutions.*

***6. Compute the optimal decision.** Ideally, after all of the first five steps have been completed, the process of computing the optimal decision consists of (a) multiplying the ratings in step 5 by the weight of each criterion, (b) adding up the weighted ratings across all of the criteria for each alternative, and (c) choosing the solution with the highest sum of weighted ratings.*

7. **Hamond and Raiffa 8 steps of decision**
    1. ***Work on the right problem.***
    2. ***Identify all criteria.***
    3. ***Create imaginative alternatives.***
    4. ***Understand the consequences.***
    5. ***Grapple with your tradeoffs.***
    6. ***Clarify your uncertainties.***
    7. ***Think hard about your risk tolerance.***
    8. ***Consider linked decisions.***

8. Decision Journal Template

Whenever you're making a consequential decision, either individually or as part of a group, you take a moment and write down:

1. The situation or context.
2. The problem statement or frame.
3. The variables that govern the situation.
4. The complications or complexity as you see it.
5. Alternatives that were seriously considered and why they were not chosen (think: the work required to have an opinion).
6. A paragraph explaining the range of outcomes.
7. A paragraph explaining what you expect to happen and the reasoning and actual probabilities you assign to each projected outcome (The degree of confidence matters, a lot.)
8. The time of day you're making the decision and how you feel physically and mentally (If you're tired, for example, write it down.)

You have to make this part your own. I've seen others include:

- What's the primary thesis.
- What is the expected outcome(s).
- What are the second and third-order consequences.
- What is the worst-case scenario and why that's ok.
- What is the potential upside beyond the core thesis.
- What emotions am I experiencing.
- What is the opportunity cost (by doing this what am I not doing).
- What unique advantages or insights do I have in this situation.
- Who is the best person to make this decision.
- What does this look like in 5 weeks, 5 months, 5 years?

9. Charles Munger Two Steps

A simple and easy approach to decision making that prevents us from being manipulated.

1. Understand the forces at play.
2. Understand how your subconscious might be leading you astray.

While most of us make decisions daily, few of us have a useful framework for thinking that protects us when making decisions.

We're going to explore Munger's two-step process for making effective decisions and reducing human misjudgment.

In A Lesson on Elementary Worldly Wisdom, Charlie Munger offers a simple two-step filter for making effective decisions:

Personally, I've gotten so that I now use a kind of two-track analysis. First, what are the factors that really govern the interests involved, rationally considered? And second, what are the subconscious influences where the brain at a subconscious level is automatically doing these things-which by and large are useful, but which often misfunction.

One approach is rationality-the way you'd work out a bridge problem: by evaluating the real interests, the real probabilities and so forth. And the other is to evaluate the psychological factors that cause subconscious conclusions-many of which are wrong.

Let's take a closer look.

1. The Forces at Play

The key to the first step is knowing what you know and what you don't know. You need to understand your circle of competence. It's just as important to know what you don't know as it is to know what you know.

If you know what you don't know, you might still have to make a decision, but your approaches for making that decision will change. For example, if you're forced to make a decision in an area that you know is well outside your circle of competence, one tool you can use is inversion.

While there are millions of factors that go into decisions, there will always be a few variables and factors that will carry the bulk of the weight. If you're operating within your circle of competence, it should be relatively easy to figure out the relevant variables and forces at play.

I can't tell you the relevant variables. There is no magic formula. To make consistently good decisions, you need to develop a deep fluency in the area in which you are making

decisions, and you need to pull in the big ideas from multiple disciplines to make sure you're exercising good judgment.

2. The Psychological Factors

There are many causes of human misjudgment, including over-confidence. These are the subtle ways that your mind might be leading you astray at a subconscious level. Your subconscious mind is larger than your conscious mind, and yet we rarely pay attention to how we might be tricking ourselves. One way to mislead yourself, for instance, is to make decisions based on a small sample size and extrapolate the results to a larger population. Another way we fool ourselves is to remain committed to something we've said in the past. We might rely on an authority figure or default to what everyone else is doing. You get the idea.

Usually, when we have extreme success or failure, there are four or five factors working in the same direction. The same goes for psychology. The more human misjudgment factors there are working against us, the more likely we are to make an ill-informed decision.

11. Environment where you can make decisions

The Modern Office is Terrible for Thinking

No one understands how your environment shapes your ability to make decisions more than Warren Buffett and Charlie Munger. While they're gifted with intellect, they make sure they get the most out of it by structuring their environment to help them make good decisions.

Most of us make decisions in an environment where it is very hard for us to behave rationally.

You can't design a worse environment for good decisions than the modern office. When you first arrive at work, you immediately start to answer the critical emails from your swelling inbox. The inner voice in your head tells you don't worry; you'll get to the rest later. Suddenly, the phone rings, it's your boss wanting to know if you have time to chat on the 15-page proposal she was supposed to read for the meeting in 30 minutes. But you haven't read the proposal either. So you glance at the executive summary and, like anyone that has learned to survive in an office, you confidently act like you know what's going on. You haven't done the work to have an opinion. But that's the game. Everyone else did the same thing. When you finally lift your head up, your email box is swelling again, you have missed calls, and it's almost time to pick up the kids from school. Where did the day go?

This isn't an abnormal day. This is every day. From the moment you arrive until the moment you leave, you make an inch of progress on twenty things rather than ten feet of progress on one thing.

The unwritten rule is that you have to do these things to justify your job. If you're not pushing paper, firing up hundreds of emails, calling and attending meetings, and chasing something down … just what the heck are you doing?

The cultural environment is typically about politics and signalling, not about putting people in a position to succeed. The physical environment is about busyness and distraction, not focus and thinking. Neither of these environments line up with the good decision making.

Contrast this to Warren Buffett. He has no computer in his office. He's not distracted every few minutes by that annoying little ding that signals a new email has arrived. His day isn't full of meetings. He doesn't have an annoying boss that comes around and asks him for something tangible that's he's working on. He just reads and thinks. No wonder he's so good at it.

If you want to think for yourself, you can't have someone always whispering in your ear. If you want space to think, you need quiet and calm not a bunch of smart people throwing

out new ideas. That's why Buffett moved from New York to Omaha. "In some places, it's easy to lose perspective. But I think it's very easy to keep perspective in a place like Omaha," Buffett says. He continues:

It's very easy to think clearly here. You're undisturbed by irrelevant factors and the noise generally of business investments. If you can't think clearly in Omaha, you're not going to think clearly anyplace.

Putting Buffett in a modern office is like giving Superman kryptonite. His superpowers would disappear. He wouldn't be able to think and concentrate. Luckily, he intentionally set up his environment in a way that makes it easier to behave rationally.

The (Super) Power of Environment

We influence our environments, but we forget they influence us too.

We like to believe that we are in charge that our brains are only influenced by our conscious thoughts. That sounds amazing, but it's wrong. Our conscious brain is much smaller than our subconscious brain. And yet when it comes to getting better at thinking and making decisions, we place all the emphasis on the conscious brain, learning mental models and methods of thinking that improve outcomes. In so doing, we improve the raw horsepower of our brain. Yet, there is no point having a 400 horsepower engine if you can only get 25 horsepower out of it.

Designing an Effective Environment

There is no environment that works for everyone. We all respond differently to different stimuli. A corner office on the 100th floor in New York might provide inspiration to some and distraction to others. What works for me might not work for you.

Here are three things we've found work for a lot of different people in a lot of different situations.

First, structure your day to maximize your energy. Most people do the tasks requiring the least amount of thought (answering emails, checking voicemails, catching up with people) in the morning when they are most productive. Meetings and decisions get pushed to the afternoon when our brains are not working as well. Switch your day around. Do the most important thing first.

Second, use chunks of time and be conscious when interrupting other people. Block chunks of time in your calendar for your own projects. I don't mean like 20 minutes, I mean like hours. I have every morning blocked off from 9-12. It's not easy to get into a state of flow, but once you're there, you're focused on one thing. It could be thinking about a problem in a three dimensional way or refining a report that you're writing for work. If you interrupt this time, it's expensive to get back to where you were, often taking 25 minutes or more to recover. Keep that in mind when you interrupt others.

Third, make effective behaviors easy. If there is chocolate in our office, you can be sure I'll eat it. That's why I lock the good stuff in a safe. Literally. This makes it harder to get to, and I eat less of it. OK, you probably want a better example than chocolate. Here's one I used to use at work. On the first page of my notebook at the intelligence agency, I listed some general thinking tools that I could fall back on for tough decisions. This prompted me to think through problems in a structured way and saved me from more than one mess. (Update: These are now a book).

Your Environment Matters More Than You Think.

We intuitively know that the physical and cultural environment matters.

You don't control everything in your environment, but you control enough to make a huge difference. Think about what you control and how you can change it to get more horsepower out of your brain.

12. SWOT Analysis.

- **Strength.**
- **Weakness.**
- **Opportunity.**
- **Threat.**

13. PESTLE Analysis.

- **Political.**
- **Economic.**
- **Social.**
- **Technological.**
- **Legal.**
- **Environmental.**

14. Stakeholder analysis

- **High power, highly interested people (Manage Closely)**: you must fully engage these people, and make the greatest efforts to satisfy them.
- **High power, less interested people (Keep Satisfied)**: put enough work in with these people to keep them satisfied, but not so much that they become bored with your message.
- **Low power, highly interested people (Keep Informed)**: adequately inform these people, and talk to them to ensure that no major issues are arising. People in this category can often be very helpful with the detail of your project.
- **Low power, less interested people (Monitor)**: again, monitor these people, but don't bore them with excessive communication.

15. Strategic Map (Check Online).

16. Decision Matrix.

- **Step 1-List all of your options as the row labels on the table, and list the factors that you need to consider as the column headings. For example, if you were buying a new laptop, factors to consider might be cost, dimensions, and hard disk size.**

- **Step 2-Next, work your way down the columns of your table, scoring each option for each of the factors in your decision. Score each option from 0 (poor) to 5 (very good). Note that you do not have to have a different score for each option – if none of them are good for a particular factor in your decision, then all options should score 0.**

- **Step 3-The next step is to work out the relative importance of the factors in your decision. Show these as numbers from, say, 0 to 5, where 0 means that the factor is absolutely unimportant in the final decision, and 5 means that it is very important. (It's perfectly acceptable to have factors with the same importance.).**

- **Step 4-Now multiply each of your scores from step 2 by the values for relative importance of the factor that you calculated in step 3. This will give you weighted scores for each option/factor combination.**

- **Step 5-Finally, add up these weighted scores for each of your options. The option that scores the highest wins!**

17. Pareto Analysis

Pareto analysis is premised on the idea that 80% of a project's benefit can be achieved by doing 20% of the work—or, conversely, 80% of problems can be traced to 20% of the causes. Pareto analysis is a powerful quality and decision-making tool.

Steps of Pareto Analysis

By applying the 80-20 rule, problems can be sorted based on whether they affect profits, customer complaints, technical issues, product defects, or delays and backlogs from missed deadlines. Each of these issues is given a rating based on the amount of revenue or sales, and time lost, or the number of complaints received. Here is a basic breakdown of the steps of Pareto analysis:

- Identify the problem or problems
- List or identify the cause of the issues or problems, noting that there could be multiple causes
- Score the problems by assigning a number to each one that prioritizes the problem based on the level of negative impact on the company
- Organize the problems into groups, such as customer service or system issues
- Develop and implement an action plan, focusing on the higher scored problems first, in order to solve the problems

Not all problems will have a high score, and some smaller problems may not be worth pursuing initially. By allocating resources to high-impact issues or higher scores, companies can solve problems more efficiently by targeting the issues that have a major impact on profits, sales, or customers.

How To Create a Pareto Chart

A common part of Pareto analysis is to graphically depict the occurrence of each variable being tracked. This depiction is called a Pareto chart, and it organises and displays information to show the relative importance of various problems or causes of problems. It is similar to a vertical bar graph in that it puts items in order (from the highest to the lowest) relative to some measurable effect of interest: frequency, cost, or time. Here is the process of making a Pareto chart.

- Develop a list of problems to be compared.
- Develop a standard measure for comparing the items. For example, how often it occurs: frequency (e.g., utilisation, complications, errors); how long it takes (time); how many resources it uses (cost).
- Choose a timeframe for collecting the data.
- For each item, tally how often it occurred (or cost or total time). Then, add these amounts to determine the grand total for all items.
- Find the percent of each item in the grand total by taking the sum of the item, dividing it by the grand total, and multiplying by 100.
- List the items being compared in decreasing order of the measure of comparison: e.g., the most frequent to the least frequent. The cumulative percent for an item is the sum of that item's percent of the total and that of all the other items that come before it in the ordering by rank.
- List the items on the horizontal axis of a graph from highest to lowest. Label the left vertical axis with the numbers (frequency, time, or cost).
- Label the right vertical axis with the cumulative percentages (the cumulative total should equal 100%).
- Draw in the bars for each item.
- Draw a line graph of the cumulative percentages. The first point on the line graph should line up with the top of the first bar.

The final step is analysis. You can now analyze a Pareto chart by identifying those items that appear to account for most of the difficulty. In the example below, the Institute for Healthcare Improvement identified three vital types of errors discovered during surgical set-up.

18. Cause and Effect

The diagram is called fishbone as its final look is in the form of a fishbone. It was initially used for quality improvement but it can also be helpful in analyzing business processes through the identification of its causes and hindrances, as well as on ways to improve it.

The cause and effect analysis basically involves two key steps which are looking backward and looking forward.

- In looking backward, the analysis focuses on identifying areas in which mistakes were made or money was lost. It looks into what had happened before. In identifying where the issues are, you are able to work towards avoiding the problem in the future. Another advantage of this is that, you'll be able to replicate a positive outcome.
- Looking into the future and planning for it, the analysis seeks to find workable solutions that are to be implemented in the future and build on the future success of the business. This analysis enables you to determine your future outcome by planning what to do now to achieve it.

This method is unique in that it encourages creative thinking as well as brainstorming in the process of breaking down issues and aligning them in the process of finding its solutions. Among the key advantages of this method is that it ensures that you don't seek out to solve the wrong problems, it also ensures that you solve the problem well enough for it to go away.

Step 1: Problem Identification

The way to use this tool is very simple. You first need to identify the problem area that needs analysis. A good way to do this is by giving a brief description of the current business situation and the consequences as well as the reasons for why they occurred.

Here you can replace the problem with a goal that you want to achieve. For instance, high profitability. You need to be very specific about the problem that you're facing as this forms the basis of your analysis. If the identification is wrong, then the analysis also tends to be wrong.

You should also identify the people involved as well as what the exact problem is and how it occurs. For example, low productivity due to absenteeism especially in the production department, which includes production personnel and the line manager, for the period from January to November 2017.

Step 2: Main Problem Causes

The next step is identifying the main causes of the problem, for example, the people, the procedures your business utilized as well as the materials or equipment. Here, you will need to do a lot of brainstorming to come up as many reasons as you possibly can.

You can use various models to help you identify as many problems as you can in a clear manner. For example, the McKinsey 7S Framework which includes, Strategy, Systems, the business Structures, Shared values of the business, Staff, Skills, and Style.

Step 3: Identify Plausible Sub-causes of the Main Causes

Thereafter, you can narrow down to further plausible causes of the main problems that you've listed. This is important for the problem-solving stage of analyzing the diagram, as you will know what to do exactly to rectify the situation. This can include issues like wrong norms and values that could be as a result of poor training of employees.

Step 4: Analyze the Diagram

By now, your diagram should be showing all the main and minor causes that you've thought of.

Depending on how complex the information is, you can do a much deeper investigation on the causes. This can be by conducting a survey as well as drawing up questionnaires.

For example, you can ask your employees to fill in a survey on how much they understand the products you sell in your business. The information you get from this will help you build upon areas of training in order to address the problem of lack or insufficient knowledge. From here, a corresponding step is developing an action plan with clear priorities that can be implemented immediately. This is made simple as the plans can comprise of actions to solve the subproblem causes.

For the action plan to be effective, it needs to be clear and to be executed aggressively. For example, a sub cause like lack of staff morale can be turned into an action plan, which will be giving incentives for staff motivation, hence, improved productivity and in turn higher profitability which was the main goal.

19. Force Field Analysis

How to Conduct a Force Field Analysis.

The analysis is best carried out in small groups of 5 to 9 people who are directly involved in the change implementation process.

It's important that everyone else who is also likely to be affected by the change is kept in the loop. To gain their commitment and support for the deployment of the project, they should be kept informed about and involved in planning, development and decision-making from the very beginning.

For a more productive discussion, have a force field analysis worksheet ready at the beginning of the meeting.

The worksheet can be paper-based, or you can use the following Creately template to start right away. Simply add the email addresses of the other group members to the document to give them edit/ review access. This way everyone can collaborate on populating the worksheet.

Step 1: Assess the current situation

You need to start the session by discussing the current situation of the organization in terms of the issue at hand with the key stakeholders.

This may include determining where you are at, the challenges you are facing due to the issue you are trying to solve, the reaction of the employees, etc.

It's also important to clarify where you want to go or the desired state you want to achieve with the initiative. At the same time, consider what will take place if you fail to take action to change the current situation.

Here you can do a quick SWOT analysis to understand what strengths you can use to overcome the existing threats and see how you can work on overcoming weaknesses and take advantage of the presented opportunities.

Step 2: Define the objective

The next step is to identify the expected outcome of the change initiative. Once you have clearly defined the goal(s), write them inside the box in the middle of the template provided above.

Step 3: Identify the driving forces

Driving forces are the factors that are in favor of the proposed change or the ones that support the achievement of the defined goal.

These are considered positive and usually includes factors like advancing technology, changing industry trends, increasing competition, opinions of customers or shareholders, incentives, etc.

In this step, your task is to brainstorm as many driving forces as possible with the team and list them in the relevant field of the worksheet.

Of course, you can turn to people outside the team (interview them), people who are specialised in the subject area to find the information you need during this step.

Step 4: Identify the restraining forces

These are the factors that will block your path to achieving your goal. They tend to restrict the impact of the driving forces. For example, these may include the fear of the individuals, organizational structures and negative attitudes of employees, etc.

The list of forces that are against change should be listed on the right-hand field of the worksheet.

One thing you need to keep in mind is not to be subjective when deciding which forces to add to the force field analysis and which ones to leave out.

Step 5: Evaluate the forces

You can evaluate the influence of each force by assigning them scores.

Using a numerical scale (10 being extremely strong and 1 being extremely weak), assign each force a score based on the impact they have on the change initiative.

You can also assess the forces by focusing on the impact each of them may have. This way you can ditch assigning each force a score.

Based on the effect they have, you can decide whether the proposed change is viable. Accordingly, you can discuss how you can influence the forces in favor of change: you can weaken the restricting forces by strengthening the driving forces.

Step 6: Create an action plan

Based on how you want to go about strengthening driving forces and weakening restraining forces, you can create a quick action plan.

This can help you clarify what needs to be done, who is responsible, the resources needed, and the due dates you need to be concerned about, etc.

20. Break Even Analysis.

The formula for break even analysis is as follows:

Break Even Quantity = Fixed Costs / (Sales Price per Unit – Variable Cost Per Unit).

Where:

- **Fixed Costs** are costs that do not change with varying output (e.g., salary, rent, building machinery).
- **Sales Price per Unit** is the selling price (unit selling price) per unit.
- **Variable Cost per Unit** is the variable costs incurred to create a unit.

It is also helpful to note that sales price per unit minus variable cost per unit is the contribution margin per unit. For example, if a book's selling price is $100 and its variable costs are $5 to make the book, $95 is the contribution margin per unit and contributes to offsetting the fixed costs.

Example of Break Even Analysis

Colin is the managerial accountant in charge of Company A, which sells water bottles. He previously determined that the fixed costs of Company A consist of property taxes, a lease, and executive salaries, which add up to $100,000. The variable cost associated with producing one water bottle is $2 per unit. The water bottle is sold at a premium price of $12. To determine the break even point of Company A's premium water bottle:

Break Even Quantity = $100,000 / ($12 – $2) = 10,000

Therefore, given the fixed costs, variable costs, and selling price of the water bottles, Company A would need to sell 10,000 units of water bottles to break even.

21. Ratio Analysis.

22. Paired Comparison Analysis.

P**aired Comparison Analysis** is an activity for evaluating a small range of options by comparing them against each other. It is a useful and easy technique for rating and ranking alternatives where the evaluation criteria are subjective by nature. This is practically helpful when priorities are not clear enough, when alternatives are completely different from one another, or when there is little objective data to base our decision on.

Paired comparison is often used to choose the most compelling problem to solve, or to select the alternative that will be the most effective. It is useful in a wide range of applications, from selecting the concept design for a new product before it goes into production, to deciding the skills and qualifications when hiring people for a new position. Decisions like these are more difficult to make than comparing which investment to take or which vendor to select (we will select the vendor who will give us the highest quality with the best price and the fastest delivery).

Paired comparison analysis is often performed with the aid of a matrix. This matrix should be made in a way that avoids comparing an option with itself or duplicating any comparison. Two additional rows can be added to the end of the table to represent:

- The number of times each option has been selected.
- The ranking of all options based on their count.

Implementing a Paired Comparison Analysis

1. With your team, identify the options to be evaluated.
2. Identify the evaluation criterion to help you make the decision (e.g. the most important, the most interesting, or the easiest to implement).
3. List all the options on the left hand column and on the top row of the matrix.
4. In each blank cell, compare the option in the row with the option in the column, then write in the cell the option that better meets the evaluation criterion.
5. Repeat the process until all possible pairs are evaluated.
6. Count the number of times each option has been chosen.
7. Rank the options based on their count.
8. Consider the options with the highest ranking.

23. Action Priority matrix.

- 1. Quick wins (high impact, low effort)-These are tasks requiring little effort but which have a high impact. As such, they are very attractive because they have high returns for a small outlay of energy. Completing quick wins should be your highest priority, and you should concentrate on these tasks as much as you can.

- 2. Major projects (high impact, high effort)-These are tasks that can give you significant results (impact), but unlike quick wins, they require you to invest a lot of time into them. These types of tasks should be your next priority after quick wins. You'll need to invest a lot of time into these projects to get them done but be careful not to let these tasks consume all of your time.

- 3. Fill-ins (low impact, low effort)-These are tasks that require a low effort for you to perform, but they also have little impact on your results. As hinted at by the name, you use these tasks to fill in your time. You should only perform these tasks if you have the time available after working on your quick wins and major projects. Consider delegating these tasks if you have that as an option. Alternatively, consider dropping these tasks altogether if possible.

- 4. Thankless tasks (low impact, high effort)-These are tasks which have a low impact but which still require a high effort. You should aim to completely eliminate these tasks, as they are not worth your time to complete.

- To use the model, follow these four steps:

1. Make a complete list of all of your tasks.
2. Score your tasks for effort and impact. You can use any scale you like to do this, but a simple 1-10 scale works well, where one is very low, and ten is very high.
3. Place each activity in the matrix according to its effort and impact scores.
4. Prioritize your activities:
5. Give quick wins the highest priority.
6. Spend the remaining time on your major projects. You should spend the majority of your time on these tasks.
7. If you have any remaining time, do your fill-in activities. Otherwise, delegate or drop these tasks.
8. Eliminate thankless tasks. Spend absolutely zero time performing these tasks.

24. Boston Matrix

The four categories can be described as follows:

- **Stars** are **high growth products** competing in markets where they are strong compared with the competition. Often Stars need heavy investment to sustain growth. Eventually growth will slow and, assuming they keep their market share, Stars will become Cash Cows.
- **Cash cows** are **low-growth products** with a high market share. These are mature, successful products with relatively little need for investment. They need to be managed for continued profit - so that they continue to generate the strong cash flows that the company needs for its Stars.
- **Question marks** are products with low market share operating in high growth markets. This suggests that they have potential, but may need substantial investment to grow market share at the expense of larger competitors. Management have to think hard about “Question Marks" - which ones should they invest in? Which ones should they allow to fail or shrink?
- **Unsurprisingly, the term “dogs"** refers to products that have a low market share in unattractive, low-growth markets. Dogs may generate enough cash to break-even, but they are rarely, if ever, worth investing in. Dogs are usually sold or closed.

25. Dice Model.

26. Decision Grid.

27. Advantage Disadvantage.

28. Decision forecast.

29. Decision Flow.

30. Compare and contrast.

31. Vroom Yetton Jago.

32. Eisenhower Matrix

33. 5 forces

34. TOWS

35. SFA Matric

36. ANSOFF Matrix

37. Strategy Map

38. Ooda Loop

How the OODA Loop works: The Four Steps.

Similar to other problem-solving methods, the OODA loop is an interactive, iterative process that entails repeating the cycle, observing and measuring results, reviewing and revising the initial decision and advancing to the next step. While the process is not always simple or linear, the four separate steps involved are:

1. **Observe:** The first step is to identify the problem or threat and gain an overall understanding of the internal and external environment. In the corporate world, this can be equated to data gathering, where all of the information regarding the current organizational state, any competitors and the market is collected. The key point about the observe step is recognizing that the world is complex. All data is a snapshot in time and must be treated as such. Therefore, entities must gather whatever information is available as quickly as possible in order to be prepared to make decisions based on it.

2. **Orient:** The orientation phase involves reflecting on what has been found during observations and considering what should be done next. It requires a significant level of situational awareness and understanding in order to make a conscious decision. Since some decisions are unconscious, or instinctual, this step involves considering what and why decisions are made prior to choosing a course of action. When applied on an individual level, the orientation step can be done by creating mental models or mental rehearsal drills to place information into narratives that shape judgement. In organizational applications, situational models can be created with machine learning (ML) tools to identify potential outcomes while removing any bias.

3. **Decide:** The decision phase makes suggestions towards an action or response plan, taking into consideration all of the potential outcomes. This can be accomplished through meetings or discussions that are focused around creating a roadmap for the entire organisation.

4. **Act:** Action pertain s to carrying out the decision and related changes that need to be made in response to the decision. This step may also include any testing that is required before officially carrying out an action, such as compatibility.

33. **Risk Assessment Decision Tree.**
34. **Game theory**
    A. **Ask: if i take action what are the consequences and how do i respond and reaction. Prisoner dilemma**
35. **Worst case scenario Analysis - Can you live with the worst outcome of the decision.**
36. **The decision doest match your values and principles. Value and Principles - Analyse if the decision aligns with your life values and principles.**
37. **Go get great consul. Person should be neutral, reasonable and not emotional on topic.**
38. **What are your alternatives.**
39. **Decision fatigue. Never make massive decision when you are fatigue**
40. **Stick with your decision. Big decision have slow process but fast movement.**
41. **Taking emotions out of decisions is one key to success.**
42. **Benjamin Franklin Method. What works for me in terms of having an alternative is to write down the pros and cons of the decision. It's called the Benjamin Franklin method of making decisions. If the pros is greater than the cons then I will execute it. If the cons are greater then I will pass.**
43. **Decision Making Tools.**
    A. **Listen, Use and Apply Critical Thinking by Richard Paul For Decision Making.**
    B. **Listen, Use and Apply Decisive by Chip Heath For Decision Making.**
    C. **Listen, Use and Apply The Decision Book By Mikael Krogerus For Decision Making.**
    D. **Listen, Use and Apply The Thinking Manager's Toolbox By William Altier For Decision Making.**
    E. **Handbook of Decision Making.**
    F. **Business Analytics_ Data Analysis & Decision Making.**

Step 84-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 85- Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works.
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman.**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding

Step 86-Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**
2. **Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
    - **First, he would learn everything he could about it and prepare physically as best as possible.**
    - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
    - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
    - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
    - **Side note: visualization is great, but it's no substitute for preparation.**

Step 87-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman.**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

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IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.
V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.
VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.
VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.
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how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 13: Deep Work and Communication

Step 88-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 89-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 90-You Have Required To Do The Work For Communication.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 91-Use Rules of Reading for Communication

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Decision Making.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books For Communication.

Step 92 - Communication Books

1. Person Has 2 Ears and 1 mouth. Therefore, The person needs to listen minimum twice more than speak. Ask Questions, Ask for clarification, Ask Myself If I understood his position in full. Try to understand the person position by restated in my own words, and Ask them to confirm or deny if I correctly stated the person position. Ask Myself, if this is logical, and the proposition leads to the conclusion. Ask Myself if I agree with the person position. Ask Myself What could be the weak point of this position.
2. One of The Most Important Traits and Features of Person are Being Critical Thinker and Think Before Speak in Any Situation in Life.
3. Better To Keep Silence and Be Thought A Fool than To Open Your Mouth and Remove all Doubt.
4. Take A moment to Think Before Speaking, to construct exactly what you wanted to tell without variously sentences. Do not be like most of the people feel the need to say the first thing that comes to mind rather taking a moment to break down the question and forming the best answer possible.
5. Never Rush yourself and anybody when communicating to answer the question, but let the person take a moment to break down the question and forming the best answer possible.
6. Absolutely do not believe anything you hear and only half of what you see.
7. What is the Key Of Story Teller: True answer that not that you do not have story. You have so many stories in your life. It is because you do not document them. To be great storyteller, you must first become, great collectors of stories. So You need to do, start new note on the paper story bank, and next time in your life something that emotionally moves you, capture it. Like interaction with coleague. Use 5w and 1h and dialogue
    A. Who
    B. What
    C. Where
    D. When
    E. How
    F. Dialogue
    G. Capture the story, and before you know it, and before you know it a story a day.

8. **Listen, Follow And Apply Rules of Reading Part 1 to 11, before looking into Communication.**
9. **Listen, Follow and Apply the following Books.**
    A. **How To Read A Book By Mortimer Adler Various Editions**
    B. **Socratic Method**
    C. **Preaching.**
        I. **EXPOSITORY PREACHING.**
        II. **Homiletic _ moves and structures.**
        III. **Homiletics.**
        IV. **Homiletics or the Theory of Preaching.**
        V. **How to Speak How to Listen.**
        VI. **Preaching _ the art of narrative exposition.**
        VII. **The Art & Craft of Biblical Preaching_ A Comprehensive Resource for Today's Communicators.**
        VIII. **Tactics and Socrates Method.**

    D. **Public Speaking.**
        I. **A Pocket Guide to Public Speaking.**
        II. **Confessions of a Public Speaker.**
        III. **Confident Public Speaking.**
        IV. **How to Develop Self-Confidence And Influence People By Public Speaking.**
        V. **How to Speak How to Listen.**
        VI. **No Sweat Public Speaking!_ How to Develop, Practice, and Deliver a Knock Your Socks Off Presentaton! with No Sweat.**
        VII. **Public Speaking Handbook.**
        VIII. **Tactics_ A Game Plan for Discussing Your Christian Convictions.**
        IX. **The Complete Guide to Public Speaking.**
        X. **The Confident Speaker.**
        XI. **The Everything Public Speaking Book. Deliver a Winning Presentation Every Time.**
        XII. **The Official TED Guide to Public Speaking.**
        XIII. **Voice and Speaking Skills For Dummies.**
        XIV. **Tactics and Socrates Method.**
        XV. **Media Argumentation_ Dialect, Persuasion and Rhetoric.**

XVI. Power, Persuasion and Manipulation in Specialised Genres_ Providing Keys to the Rhetoric of Professional.
XVII. How to wIN every Argument: the art of Debating and Public Speaking
XVIII. Socratic method today.
XIX. Socratic Method.
XX. The Art of Asking Essential Questions_ Based on Critical Thinking Concepts and Socratic Principles.
XXI. Rhetoric

E. Communication Face To Face.
I. Arguing with Socrates_ An Introduction to Plato's Shorter Dialogues.
II. Does Socrates Have a Method__ Rethinking the Elenchus in Plato's Dialogues and Beyond.
III. How to Speak How to Listen.
IV. Plato's "Euthyphro"_ an Examination of the Socratic Method in the Definitional Dialogues.
V. Socrates_ A Guide for the Perplexed.
VI. Socrates' Way_ Seven Keys to Using Your Mind to the Utmost.
VII. Tactics_ A Game Plan for Discussing Your Christian Convictions.
VIII. The Language of Law School_ Learning like lawyer.
IX. The Socratic Method.
X. The Trivium_ The Liberal Arts of Logic, Grammar.
XI. We Need to Talk_ How to Have Conversations That Matter.
XII. Tactics and Socrates Method.
XIII. Never Split the Difference_ Negotiating As If Your Life Depended On It.
XIV. Socrates Meets Dante.
XV. Socrates meets Jesus.
XVI. Socrates Meets Kant.
XVII. Socrates Meets Machiavelli.
XVIII. Socrates Meets Marx.
XIX. Socrates Meets Sarte.
XX. Rhetoric.
XXI. Encyclopedia of Rhetoric

F. **Debate.**

I. **Argumentation and Debate_ Critical Thinking for Reasoned Decision Making.**
II. **Art, argument, and advocacy_ mastering parliamentary debate .**
III. **How to Debate Leftists and Destroy Them_ 11 Rules for Winning the Argument.**
IV. **How to Speak How to Listen.**
V. **Learning to “Think Like a Lawyer.**
VI. **Tactics_ A Game Plan for Discussing Your Christian Convictions.**
VII. **The Art of Debate.**
VIII. **The debater's guide.**
IX. **Winning Debates - International Debate.**
X. **Tactics and Socrates Method.**
XI. **Socratic method today.**
XII. **Socratic Method.**
XIII. **The Art of Asking Essential Questions_ Based on Critical Thinking Concepts and Socratic Principles.**
XIV. **How to wIN every Argument: the art of Debating and Public Speaking.**
XV. **Rhetoric.**
XVI. **Encyclopedia of Rhetoric**

Step 93-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 94-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. The world never tells you that you're wrong; it only gives you outcomes.
3. Don't force. Don't resist. Have a beginner's mind. Let the world teach you.
4. **Reality will do a lot of the work for us if we simply align with it.** Most of the time we're simply adding friction because we want the world to work in the way we think it should.
5. If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care

about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything

outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models

allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's

got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do

put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 14: Deep Work and Teach

Step 95-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 96 - NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 97-You Have Required To Do The Work For Teaching.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 98-Use Rules of Reading for Teaching

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Teaching.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Bible Study- VERY SLOW Reading- Complex Text.**
        - **I. Method 1-Chapter Summary Method of Bible Study. Pages 142-146.**
        - **II. Method 2-Character Quality Method of Bible Study. Pages 147-159.**
        - **III. Method 3-Thematic Method of Bible Study. Pages 160-162.**
        - **IV. Method 4-Biographical Method of Bible Study. Pages 163-175.**
        - **V. Method 5-Topical Method of Bible Study. Pages 176-179.**
        - **VI. Method 6-Word Study Method of Bible Study. Pages 180-188.**
        - **VII. Method 7-Book Background Method of Bible Study. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method of Bible Study. Pages 194-204.**
        - **IX. Method 9-Chapter Analysis Method of Bible Study. Pages 205-214.**
        - **X. Method 10-Paragraph Study. Pages 215-228.**
        - **XI. Method 11-Verse by Verse Analysis Method. Pages 229-233.**
        - **XII. Method 12-Book Synthesis Method of Bible. Pages 234-237.**

XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books For Teaching

Step 99-Teaching Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 12, before looking into Teaching.**
2. **Listen, Follow and Apply the following Books.**
   A. **How to Read A Book bY Mortimer Adler Various Editions**
   B. **Socratic Method and Logic**
   C. Building a Better Teacher_ How Teaching Works.
   D. Does Socrates Have a Method__ Rethinking the Elenchus in Plato's Dialogues and Beyond.
   E. Socrates and the Socratic Dialogue.
   F. Socrates_and_Philosophy_in_the_Dialogues_of_Plato.
   G. Socratic Circles_ Fostering Critical And Creative Thinking In Middle And High School.
   H. Socratic Ignorance and Platonic Knowledge in the Dialogues of Plato.
   I. Socratic Teaching Method (A Textbook for_ Socratic Questions 101.
   J. Tactics and Socrates Method.
   K. Teaching Psychology and the Socratic Method_ Real Knowledge in a Virtual Age.
   L. Teaching to Learn, Learning to Teach.
   M. The art of teaching art _ a guide for teaching and learning the foundations of drawing-based art.
   N. How Learning Works.
   O. Learning to Read Critically in Teaching and Learning (Learning to Read Critically Series).
   P. Teaching to Learn, Learning to Teach.
   Q. The-role-of-socratic-questioning-in-thinking-teaching-and-learning.
   R. THE_SOCRATIC_METHOD_AS_AN_APPROACH_IN_TEACHING_SOCIAL_STUDIES_A_LITERATURE_REVIEW.
   S. Heather Coffey_Socratic method.
   T. EXPERIENCE-EDUCATION-JOHN-DEWEY.
   U. Socratic Questioning
   V. Platos Socrates as Educator
   W. Redefining Scientific Thinking for Higher Education
   X. Socratic Method In The Classroom.

Y. Teaches Like Socrates

Z. The Power of Socratic Classroom

AA. Thinker Guide of Socratic Questioning

BB. Socratic Logic_ _ A Logic Text using Socratic Method, Platonic Questions, and Aristotelian Principles.

CC. The Art of Asking Essential Questions_ Based on Critical Thinking Concepts and Socratic Principles.

DD. Socratic Method Today

Step 100- Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**
2. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 101-Teach.

Teach

A. **Let The People Ask Questions and Use Socratic Method.**
B. **Additionally, Be Honest and Transparent at all time, if I do not know, then let the people know that I do not know.**
C. **Always be humble.**
D. **Lead the people to the truth, by asking them to never criticise the idea, without fully investigated. Ask Them to read, and use Rules of reading to find out the answers.**
E. **Never discourage the person, but encourage the person and lets investigate this question together to find the answer.**
F. **Primary Goal of this step is to take stock of all the knowledge we have acquired and teach it to someone else.**
G. **Pause and think carefully, before Talking, Speaking, Communicating For Following Reasons:**
    - **Use How to Read A Book Rules and Steps by Mortimer Addler for Various Edutions**
    - **Socratic Logic, Method AND Questioning.**
    - **Think How Will I Say this.**
    - **Think What Words Will I Use Communicating.**
    - **Think The way I will Respond.**
    - **Think Why would I say and respond this way.**
    - **Think, If this is logical what will I say**
    - **Think, If this is reality what I am saying, Responding and Communicating.**
    - **Think, If there are Questions might arise?**
    - **Think of Questions, I might ask?**
H. **Teaching can be done through different means:**
    - Videos, Audio Podcast, Writing, Conversation, Speeches
I. The crucial point is that you need to collect all the information you have gathered and attempted to articulate it in simple words that can be grasped by someone wholly unfamiliar with the topic.

J. This step will force your mind to organise your knowledge in a way that can be utilised more practically. The importance of this step lies in the fact that when you try to reorganise and pass on all the information you have, you'll inevitably discover gaps in your understanding that will compel you to revise your resources to plug them. It will also ingrain your knowledge on a deeper level, due to the massive difference between simply regurgitating acquired knowledge and understanding it enough to be able to teach someone else.

K. Method of Teaching.
    - Compile a Youtube video on the larger topic.
    - Create presentation or blogpost.
    - Write a book chapter or something else.
    - Conversation with someone.

Step 102-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. The world never tells you that you're wrong; it only gives you outcomes.
3. Don't force. Don't resist. Have a beginner's mind. Let the world teach you.
4. **Reality will do a lot of the work for us if we simply align with it.** Most of the time we're simply adding friction because we want the world to work in the way we think it should.
5. If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care

about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.
II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.
III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything

outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models

allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's

got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do

put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 15: Deep Work and Writing

Step 103-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 104-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 105-You Have Required To Do The Work For Writing.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 106-Use Rules of Reading for Writing

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research ON the Topic Before Any Writing On The Subject.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**

VIII. **Method 8-Book Survey Method. Pages 194-204.**
IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books On Writing

Step 107-Books On Writing

1. **Listen, Follow And Apply Rules of Reading Part 1 to 13, before looking into Writing.**
2. **Listen, Follow and Apply the following Books For Writing.**
    A. **Writing Research.**
        I. **How to Read A Book By Mortimer Adler Various Editions**
        II. **How-to-Write-a-Better-Thesis.**
        III. **A Manual for Writers of Research Papers, Theses, and Dissertations.**
        IV. **Academic writing_ A Handbook for International Students.**
        V. **Authoring a PhD How to plan, draft, write and finish a doctoral thesis or dissertation.**
        VI. **English for Writing Research Papers.**
        VII. **How to Write and Publish a Scientific Paper.**
        VIII. **How to Write Better Medical Papers.**
        IX. **How to write dissertations & project reports.**
        X. **Little Brown Handbook, The, MLA Update Edition.**
        XI. **Mastering Academic Writing in the Sciences _ A Step-by-Step Guide.**
        XII. **Patterns for College Writing_ A Rhetorical Reader and Guide.**
        XIII. **Patterns for College Writing, Brief Edition_ A Rhetorical Reader and Guide.**
        XIV. **Planning Your Research and How to Write It.**
        XV. **Steps+to+Writing+Well.**
        XVI. **The Craft of Scientific Writing.**
        XVII. **Writing Science_ How to Write Papers That Get Cited and Proposals That Get Funded.**
        XVIII. **Writing Scientific Research Articles_ Strategy and Steps.**
        XIX. **The Longman Writer_ Rhetoric, Reader, Research Guide, and Handbook.**

B. **Writing Novel.**
    I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    II. **The Complete Handbook of Novel Writing_ Everything You Need to Know to Create & Sell Your Work.**

C. **Writing Children Book.**
    I. **How to Write a Children's Book and Get It Published.**

D. **Writing Legal Writing.**
    I. **Legal Writing and Analysis.**

E. **Writing Fiction.**
    I. **An introduction to literature _ fiction, poetry, and drama.**
    II. **Classic Writings on Poetry.**
    III. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    IV. **How to Write Poetry_ And Get it Published.**
    V. **Literature and the Writing Process.**
    VI. **Popular Lyric Writing_ 10 Steps to Effective Storytelling.**
    VII. **Writing Poetry.**
    VIII. **How to Write Like Tolstoy_ A Journey into the Minds of Our Greatest Writers.**

F. **Writing Non-Fiction.**
    I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    II. **On Writing Well, The Classic Guide to Writing.**
    III. **Executive Writing Skills for Managers_ Master Word Power to Lead Your Teams, Make Strategic Links and Develop Relationships.**
    IV. **The Sense of Style_ The Thinking Person’s Guide to Writing in the 21st Century .**

G. **Writing Technical Writing.**
    I. **Technical Writing 101_ A Real-World Guide to Planning and Writing Technical Documentation.**
    II. **The Blackwell Encyclopedia of Writing.**
    III. **The Handbook of Technical Writing.**
    IV. **Writing With Power Techniques for Mastering the Writing Process.**

H. **Writing Comedy.**
    I. **An introduction to literature _ fiction, poetry, and drama.**
    II. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    III. **The Art of Comedy Writing.**
    IV. **The Complete Idiot's Guide to Comedy Writing.**

I. **Writing Article.**
    I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    II. **The Complete Guide to Article Writing_ How to Write Successful Articles for Online and Print Markets.**

J. **Writing Screenwriting.**
    I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    II. **The Screenwriter’s Bible, 6th Edition_ A Complete Guide to Writing, Formatting, and Selling Your Script.**

K. **Writing Essay.**
    I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    II. **Get Writing_ Paragraphs and Essays.**
    III. **Little Brown Handbook, The, MLA.**
    IV. **Logical Essay Writing.**
    V. **Real Essays with Readings with 2009 MLA Update_ Writing Projects for College, Work, and Everyday Life.**
    VI. **Real Writing with Readings_ Paragraphs and Essays for College, Work, and Everyday Life.**
    VII. **The Write Start_ Sentences to Paragraphs with Professional and Student Readings.**
    VIII. **Write Source_ A Book for Writing, Thinking, and Learning.**

IX. **Writers Resources From Paragraph to Essay.**
X. **Writing Analytically.**
XI. **Writing Arguments_ A Rhetoric with Readings.**
XII. **Real Writing with Readings_ Paragraphs and Essays for College, Work, and Everyday Life.**

L. **Writing Book.**
I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
II. **Write More, Publish More, Stress Less!_ Five Key Principles for a Creative and Sustainable Scholarly Practice.**

M. **Writing Report.**
I. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
II. **Writing a Report_ Step-by-step Guide to Effective Report Writing.**

N. **Writing Films.**
I. **Writing the Short Film, Third Edition Writing & Journalism.**

O. **Writing Debate.**
I. **A Writer's Reference.**
II. **Argumentation and Debate_ Critical Thinking for Reasoned Decision Making.**
III. **Art, argument, and advocacy_ mastering parliamentary debate.**
IV. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
V. **How to Debate Leftists and Destroy Them_ 11 Rules for Winning the Argument.**
VI. **Learning to “Think Like a Lawyer.**
VII. **Socratic Debate.**
VIII. **The Art of Debate.**
IX. **The debater's guide.**
X. **Winning Debates - International Debate Education Association.**

P. **Dialogue.**
    I. **A Writer's Reference.**
    II. **Compact Literature_ Reading, Reacting, Writing, 2016 MLA.**
    III. **Socratic Dialogue.**

Q. **Writing At Work.**
    I. **Organization of Successful Writing at Work.**

R. **Write Sermon.**
    I. **Christ Centered Preaching_ Preparation and Delivery of Sermons LECTURE.**
    II. **EXPOSITORY PREACHING.**
    III. **Homiletic _ moves and structures.**
    IV. Homiletics.
    V. Homiletics or the Theory of Preaching.
    VI. Preaching _ the art of narrative exposition.
    VII. The Art & Craft of Biblical Preaching_ A Comprehensive Resource for Today's Communicators.

3. Use Rules of Reading Before Writing: Comments, Book, Essay, Poem, Dialogue, Debate**, Dissertation or any Other Type of Writing.**
4. **Have Grammar Book in the Language I am writing, to ensure that my Grammar is Good and correct, and there are no mistakes in grammar.**

Step 108-How To Become Straight A Student

Efficiency. The simple truth is that the brute force techniques used by most students are incredibly inefficient. When it comes to exam preparation, passive review is not an effective way to learn complicated concepts. It's also mentally draining, which further diminishes the rate at which you can absorb and internalize information. For paper writing, this same problem holds. When you approach the task without proper preparation, it becomes incredibly tiring and you can end up spinning your wheels. After a while, even the formation of coherent sentences becomes difficult and time intensive. In contrast, the techniques I came up with were so streamlined that I could learn more material than my classmates and actually spend less time studying. By eliminating stupid habits and wasted effort, I transformed exam prep and paper writing from a dreaded chore to a targeted activity. You will learn how to:

- Manage your time and deal with the urge to procrastinate.
- Take targeted notes in class.
- Handle reading assignments and problem sets with ease.
- Prepare efficiently for exams.
- Master the art of exam-taking.
- Write incisive critical analysis essays.
- Conduct thorough research.
- Write standout term papers.

A big part of the solution is timing—they gain efficiency by compressing work into focused bursts. To understand the power of this approach, consider the following simple formula:
work accomplished = time spent x intensity of focus

With this formula in mind, you can begin to understand why many straight-A students actually study less than their classmates: They replace long, low-intensity stretches of work with a small number of short, high intensity sessions. Of course, this is not the whole story behind their success; what straight-A students actually do in these short bursts is also crucial—technique is just as important as timing. Part Two (Quizzes and Exams) and Part Three (Essays and Papers) of this book are dedicated to these technical details. But learning how to follow an efficient schedule, and banishing pseudo-work from your college experience for good, is a crucial first step toward your academic overhaul.

Quizzes vs. Exams

If the test is worth less than 15 percent of your final grade, it's a quiz; otherwise, it's an exam. If the test is worth only 5 percent or less of your grade, designate this a tiny quiz. Don't spend too much time on tiny quizzes. Even if you fail one, it still probably won't change your final letter grade. And if you're attending classes and keeping up with your reading, you should be able to score above average with little to no preparation.

Step 1

Take Smart Notes

Gather the Right Materials When I was a freshman, less than half of my class brought a laptop to campus. The year I graduated, over 95 percent of incoming freshmen brought laptops. By the time you read this, laptops will more or less be the de facto standard for undergraduates across the country, and this is a great advancement for the cause of collegiate note-taking. Why? I think David, another Dartmouth student, put it best: "Use your laptop. Seriously! You will be overwhelmed by the quality and legibility of your notes… it's really a no-brainer."

Take Smart Notes in Nontechnical
Courses (What's the Big Idea?)

The key to doing well in these courses is straightforward: Identify the big ideas. That's what it all comes down to. Exams in nontechnical courses focus entirely on big ideas—they require you to explain them, contrast them, and reevaluate them in the light of new evidence. If you are aware of, and understand, all of the big ideas presented in the course, these tasks are not so difficult, and strong grades will follow. As you would expect, lectures are a major source of these big ideas. Identifying them, however, is not a trivial task.

Professors ramble. And they rarely start a class by clearly identifying the big ideas that will be explored. Instead, they tend to dive right in, leaving the poor student to separate on his own the interesting conclusions from the digressions.

Format Your Notes Aggressively

When it comes to formatting the text itself, the basic rule to follow is that anything that makes the information easier to read is fair game. You don't need a consistent scheme. Don't be afraid to use aggressive text formatting to help emphasize important points. On a computer, smart students often make use of bold fonts and lists to help organize their thoughts. Capture Big Ideas by Using the Question/Evidence/Conclusion Structure Keep in mind that professors don't always state the question. Often they jump right into the evidence and leave it to you to deduce the question being discussed. Don't be afraid to jot down "QUESTION:" and then leave the rest of the line blank as you begin recording evidence. Once you figure out what the professor's talking about, you can go back and fill in this blank.

The same holds true for conclusions. Professors will sometimes hint at a conclusion but not come right out and present a neat endpoint for the current discussion. In this case, it will be up to you to synthesize the question, evidence, and professor's hints into a conclusion of your own. This is the important part. When you formulate a conclusion, you are cementing a big idea. If you can't finalize a conclusion before the professor moves on to the next question, simply jot down "CONCLUSION:" and plan to come back later during a lull in the lecture, or immediately following class, to fill in the blank.

Step 2

Demote Your Assignments

Work Constantly

Most college students depend on “day-before” assignment planning, meaning they never start an assignment until the day before it’s due. This might be the simplest scheduling decision, but it creates many problems. Large assignments will quickly transform from potentially interesting to tedious to painful when tackled in one monolithic, last-minute chunk of time. And, if two or more assignments happen to be due on the same day (which will happen often), you will be forced into a frenzied work marathon that will produce lackluster results at best. Smart students Smart students avoid these issues by working constantly on assignments, in small chunks, every day. “I try to sit down every Sunday night and plan out the week,” explains Simon, a straight-A student from Brown. “My goal is to make sure that I don’t have too much work on busy days and that I do at least a little bit each day.” For example, if you have a problem set due every week, complete one problem a day, one hour at a time. Don’t spend five hours the night before. The same goes for reading assignments—knock off a chapter a day, and you’ll never find yourself spending a lonely night with a textbook and a six-pack of Red Bull.

Bear in mind that even if you get caught up on all of your assignments for a given class, you should continue to work. For example, if it’s Sunday morning and you have already finished your reading for Monday’s history class, and you have time to spare, break out a book and do a little of the reading for Wednesday’s history class. This doesn’t mean that you should study like crazy twenty-four hours a day. Don’t stay up until 2 A.M. Sunday night trying to finish the entire week’s load. But on days where you happen to be ahead of schedule, and you have already put aside time to work on a certain class, take advantage of this fortuitous situation to get ahead. Once you get used to working a little bit every day, you’ll be surprised by how often this situation might arise.

Don’t Read Everything

For example, in most college courses there are one or two sources that show up on the reading list for almost every lecture. We will call these favored sources— they’re usually a textbook or a course reader, and they provide the basic structure for the course by outlining key facts and arguments in a condensed form. Always read the assignments from favored sources.

Professors usually augment these favored sources with a variety of supplemental readings that provide context or analyze certain arguments and events in more detail. These supplemental readings are often academic papers, transcripts of speeches, or chapters from books —and they are typically fascinating. But they are also typically expendable, and you should not plan on reading them all. Instead, if your time is limited during a particular week, then your strategy should be to select only the most important supplemental readings for review. So how do you decide which supplemental readings to review, which to skim, and which to skip? Straight-A students follow this simple hierarchy: Readings that make an argument are more important than readings that describe an event or person, which are more important than readings that only provide context (i.e., speech transcripts, press clippings).

Confirming Your Decisions

You should always use the lecture itself to confirm your choice about what to read and what to skip. If the professor emphasizes the importance of a work that you dismissed (which will happen occasionally—this system isn't perfect), then make a note that you will need to go back and cover this reading in more detail before the next exam. A smart technique is to simply write these skipped readings right onto your syllabus as an assignment for a later class. Choose a day with a light reading load, and treat the assignment as if it was given to you by your professor. If you don't explicitly schedule a time to cover this material, you will invariably procrastinate and then find yourself with a huge reading list to cover right before the exam.

Take Smart Notes on Your Favored

Reading Assignments

We've discussed which readings to ignore or skim. But the logical next question is what to do with the favored sources that you decide to read carefully. In this situation, how you take notes on the reading makes a big difference. If you write down very little, the assignment can be completed fast, but the time will be wasted because you won't have bothered to extract the big ideas in a way that makes them accessible when it comes time to study. If, on the other hand, you take detailed notes on every paragraph, your assignments will take way too long to complete. The best compromise is to use a strategy similar to the one outlined earlier for taking lecture notes. To refresh your memory, the core of this strategy is that all big ideas can be reduced to a question, evidence, and conclusion. This approach can work wonderfully for reading assignments as well. Apply it as follows:

First, as with lectures, try to take notes on your computer. They will be more organized and easier to computer. They will be more organized and easier to follow later on, when you use them for review. In addition, typing makes it easier to record more and finish faster. Next, carefully read the beginning of the assignment. Look for the question being answered by the author. Note that this is different than a thesis statement. For example, "Why did the Clinton health care plan fail?" is a question. "The Clinton health care plan failed because of resistance from commercial health care providers" is a thesis. In a reading assignment, the question can usually be found in the title or perhaps explained in the first few sentences. Record this in your notes, and label it clearly. Next, look for the

author’s conclusion (the thesis statement). This is perhaps the most difficult part, since academics are known to propose complicated answers to their questions, especially when writing. So it may take some serious consideration to figure out what’s being suggested. Search the first few paragraphs; this is typically where the conclusion is hidden. Also check the final few paragraphs. Often a thesis is proposed at the beginning of an article but then refined slightly at the end once all of the supporting evidence has been presented. When you feel confident in your understanding of the conclusion, record it carefully in your notes. Don’t worry if it takes several sentences to capture the point—err on the side of being thorough. Now comes the easy part: Skim the entire reading. Now comes the easy part: Skim the entire reading. Don’t take notes yet. Instead, use a pencil to make checkmarks next to important paragraphs that jump out at you. Because you are reading fast, you may miss some points—don’t worry. “Just get the gist of the author’s message and how he is supporting that message with evidence, then move on,” explains Jason, a straight-A student from the University of Pennsylvania. You don’t need to capture everything. Your goal is simply to mark a few solid examples that justify the conclusion as the answer to the question.Once you have skimmed through the entire reading, go back and find your check marks. For each mark, record in your notes a concise summary of the corresponding point. Label each point in your notes with the page number where you found it. This shouldn’t take long. Don’t worry about being formal or grammatically correct. Just dump these pieces of evidence into your notes. When you’re done, your notes should contain a clearly labeled question followed by a half-dozen or so bullet-pointed pieces of evidence, then a clearly labeled conclusion.

Don’t Work Alone on Problem Sets

Perhaps the most important rule for taming the problem sets assigned in technical courses is to follow our earlier rule and work on them constantly. As Ryan, a straight-A student from Dartmouth, explains: “You can work on problem sets in small pieces while you’re between classes or activities.” Concentrating on only one or two problems a day will help you avoid mental fatigue. Once your brain gets tired, it’s easy to stall—but if you spread out your work, you will end up spending fewer hours on the assignment than if you tried to do it all at once.

Even with a smart schedule, however, you will probably still get stuck occasionally. When this happens, use all the available resources to help you get unstuck. If you’re allowed to collaborate with your classmates, which is often the case in technical courses, definitely take advantage of this opportunity. As Greta from Dartmouth explains, working in groups “can drastically cut the time required to finish a really hard problem set.” Identify one or two students who share a similar skill level Identify one or two students who share a similar skill level as you and then construct a regular schedule for working together on the class assignments. Set your meeting dates for two or three days before the deadlines; this gives you time to first try the problems on your own and identify the ones that give you the most trouble. Then, when you meet with your problem set group, your energy will be focused where it’s needed most. However, don’t meet the day before your deadline. It’s important to have at least one day before handing in the assignment so you can review all of your answers and fix any small mistakes. You should also take advantage of office hours. Most technical courses hold office hours once a week, usually run by a teaching assistant (TA). These meetings are meant to clarify complicated concepts from class and to be a source of help on hard problems. Always go to office hours, if you have time, and arrive knowing which homework problems pose the biggest challenge to you. Don’t be afraid to ask for help. You will learn a lot during these weekly sessions, since the TAs will be able to walk you through the more difficult concepts—which will ultimately save you a lot of time and frustration.

Solve Problems on the Go

First, set aside a little block of time to familiarize yourself with a couple of problems, and make sure you understand exactly what is being asked. You may need to review your notes to refamiliarize yourself with the relevant concepts. Next, try to solve the problem in the most obvious way possible. This, of course, probably won't work, because most difficult problems are tricky by nature. By failing in this initial approach, however, you will have at least this initial approach, however, you will have at least identified what makes this problem hard. Now you are ready to try to come up with a real solution. The next step is counterintuitive. After you've primed the problem, put away your notes and move on to something else. Instead of trying to force a solution, think about the problem in between other activities. As you walk across campus, wait in line at the dining hall, or take a shower, bring up the problem in your head and start thinking through solutions. You might even want to go on a quiet hike or long car ride dedicated entirely to mulling over the question at hand.

Write Solutions Right the First Time

Another important time-saving tip for problem set work is to record solutions formally the first time you write them down. Many students first jot down their answers informally and then return later to reformat them into something neat enough for submission. There is no reason to include both steps. You are, for no good reason, adding a lot of extra time to the process. Instead, go slowly and deliberately the first time. Write your answer carefully, and clean it up immediately until it is of submission quality. Then you can cross the assignment off your list and it will be one less thing to worry about.

Step 3

Marshal Your Resources

Smart students understand that if you're studying hard, then you've done something wrong. Preparing for a test should not be painful. And it should not require a lot of time. If you have been putting Steps #1 and #2 into practice, taking smart notes and handling assignments effectively, studying should not be a big deal for you either. In fact, when faced with a looming quiz or exam, you have to do only two things. First, organize your material intelligently. Second, perform a targeted review of this material. This section will teach you how to accomplish the former. Don't worry—organizing your material properly is not a difficult task, but it is important that you do it right. Many students neglect this step, eager to dive right into the review, but by doing so they condemn themselves to hours of unnecessary work. You don't want to be like these students. Pay attention to the advice that follows and you will experience a significant reduction to the difficulty of your study experience.

Define the Challenge

Before you can conduct any meaningful studying, you must first define the scope of the exam. As Simon from Brown puts it: "You need to know what kind of information the professor wants you to know." To accomplish this goal, answer the following questions:

- Which lectures and reading assignments (or problem sets) are fair game?
- What type of questions will there be, and how many of each? As Christine from Harvard explains: "It's helpful to know in advance what kind of knowledge will be asked for on the exam—IDs, dates, broad syntheses of the texts' major arguments?"
- Is the exam open note or open book?
- For a technical class, will formulas be provided or do they need to be memorized?
- How much time will be available? Does the professor expect the exam to be easy to complete during the test period or a challenge?

Some professors offer answers to these questions without being prompted. Many, however, do not. If it's two weeks before the exam, and the professor hasn't mentioned any details yet, you should ask. If you're shy, ask after class. But get the information as early as possible—it's crucial to your success. Build a Study Guide (Organizing Nontechnical Course Material) "I have always been a big fan of making a study guide," admits Ryan from Dartmouth. This is a technique that popped up again and again in my

straight-A interviews. Each student, of course, had his or her own variation on study guide creation, but they all followed, more or less, this same general approach:

For a nontechnical course, once you find out which lectures and reading assignments are fair game for the exam, print out the corresponding notes that you've typed up or gather the pages you've written on (don't be afraid to deconstruct your notebook). Cluster these pages into piles, separated by general topic. Clearly label each of these piles with its topic and fasten them together with a paper clip so you can easily transport them without mixing up the pages. This final step is important, since you will be moving to and from your various isolated study spaces once you begin your review. For simplicity, we will refer to these topic-themed piles as "chapters." Your final study guide, therefore, should contain a chapter, consisting of reading and lecture notes, for each general topic that might be covered on the exam.

Construct a Mega-Problem Set
(Organizing Technical Course Material)

For a technical course, many students follow a variant of the study guide approach that focuses on sample problems. It works as follows: Your problem set assignments are the key to your review process. Start a pile for each problem set that covers material that might appear on the exam. Next, you'll need to supplement each problem set with sample problems from your lecture notes. For each lecture relevant to the upcoming exam, do the following:

1. Match the lecture to the problem set that covers the same material.
2. Copy sample problems from these lecture notes onto a blank sheet of paper. You don't have to copy the steps or the answers, just the questions.
3. Label the blank sheet of paper with the date of the lecture. This will help you later figure out where these problems came from (and more important, where their answers can be found).
4. Fasten this sheet with a paper clip to the problem set you matched it to in step one. In other words, this process transforms your problem sets into mega-problem sets by adding extra problems drawn from your lecture notes. Pretty simple.

Finally, you must augment your mega-problem sets with technical explanation questions. What are these?

For every major topic covered in a particular megaproblem set, jot down a question that asks you to explain the basics of the topic. For example, as Greta from Dartmouth recounts, in an “economics course, I would make study sheets and then add a general question such as: what happens when a government increases spending and lowers interest rates?” Or, for a chemistry class, you might have a problem set containing many questions that require you to draw the molecular structure of specific chemical compounds. In this case, you could add a technical explanation question along the lines of: “Explain the general procedure for drawing a molecular structure, why this is useful, and what special cases must be kept in mind.” It’s important that you add these technical explanation questions in addition to your regular sample problems, since they will reveal whether or not you understand the underlying concepts or if you’ve just memorized the steps for some particular problems. One last note: If your professor makes a practice exam available, then print out a copy of it and store it with your mega-problem sets. For technical courses, sample exams are a great review tool, and you will definitely want to have them handy when it comes time to study.

Prepare Memorization Aids

Both technical and nontechnical courses sometimes require you to do some memorization —formulas, chemical equations, artwork, dates, or chronologies— and the most efficient way to memorize this information is by using flash cards. Almost every straight-A student interviewed for this book used flash cards to help with rote memorization. Fortunately, this technique is easy. Buy a stack of index cards, put the prompt on one side and the answer on the other. Constructing these flash cards, however, can take longer than you might imagine, so start early. If possible, start writing up your cards at least a week before the first day you plan to actually study. The activity is mindless—you can write flash cards while w atching TV—so it shouldn’t be too hard to get them done, in advance, bit by bit.

Schedule Your Organization Wisely

Don’t try to organize and study in the same day. This is a crucial tactic used by many straight-A students. When you review, you want your brain at full power. If you organize your materials the same day that you review them, your brain will be too tired to accomplish both effectively. So keep these two tasks separate and you’ll end up working more effectively, which reduces the total time spent and produces better results.

Step 4 Conquer the Material

This is the step students most commonly identify with exam preparation. It's also the step that most students misguidedly spend the majority of their time on. You're not most students—at least not anymore. All of the work you put in up to this point was meant to make this one step as small and painless and insignificant as possible. So don't worry. There are no all-nighters in your future. What follows are powerful techniques for taking your imposing piles of study material and imprinting the key ideas on your mind as efficiently as possible. These techniques are quick but ruthlessly effective. Use them with confidence. They get the job done, and they get it done fast.

USE Feynman Technique

Feynman Technique

I. **Choose a Concept, Idea, topic to Learn. Select a Topic You are interested in learning about and write it at the top of the blank page in the Notebook or Paper.**
    A. Choose your topics carefully: Not everything that you study suits this technique. Usually abstract complex ideas are best understood by Feynman technique but ideas that are evidence-based/observational might not really be suited for this.
    B. Selecting a concept to study compels you to be intentional about what you don't know. It also forces you to choose a topic that's small enough that it could reasonably fit onto one or several pages.
    C. **You face what you don't know**. By writing a topic down on a blank page, you acknowledge you're starting from scratch or at least filling in some blanks. In doing so, take the initial step in the process.
    D. **You need to be specific**. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.

II. **Use It For Real.**
    A. Use it for real: perfectly suitable for weekly tech-talks, lectures, paper-reading, Study, Bible Study, Sermon or any type of study, deep work and deep study sessions.

III. Study The Topic By Reading, Listening, Watching and Communicating.

A. You have to start small. You really only have a page (or a few) to fill up with information. You can’t fit everything there is to know about “Evolutionary Science” or “Microeconomics” or “Psychology” on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.

B. Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.

C. Actually put the time and effort: Once you have selected the correct set of topics, make sure you actually spend the time and effort to go through the entirety of the techniques. Feynman technique is great for having a basic framework of the topic inside your head with the details chopped off. It's important to get a very clear picture of the basics in your head right - the details can be filled in later.

D. Make it your own.
   - Start with not knowing.
   - Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
   - Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

E. Take Notes On the Topic From Study.

F. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

G. Don't write notes on notes: Life is short.

H. Cornell Notes.
   - How Will I Take Notes and Cornell Note Take Method Pages 79-82.

IV. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

V. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

VI. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.**

A. **Step 1- Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method and Follow Each Steps Of The Method Until Finish All Steps, While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times For Each Step.**

B. **Step 2- Following Rules of Reading Methods:**

C. **Skimming:**

I. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

D. **Entertainment**

I. **Method 1-Speed Reading. Pages 58-63.**

E. **Methods for Basic Knowledge For Deep Work or Bible Study.**

I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**

II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**

III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**

IV. **Method 4-Flip Through Pages and Analyse. Page 69.**

V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**

VI. **Method 6-Devotional Bible Read. Pages 72-73.**

F. **Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**

I. **Method 1-Chapter Summary Method. Pages 142-146.**

II. **Method 2-Character Quality Method. Pages 147-159.**

III. **Method 3-Thematic Method. Pages 160-162.**

IV. **Method 4-Biographical Method. Pages 163-175.**

V. **Method 5-Topical Method. Pages 176-179.**

VI. **Method 6-Word Study Method. Pages 180-188.**

VII. **Method 7-Book Background Method. Pages 189-193.**

VIII. **Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
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XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
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XX. **Method 20- How To Read A Book Pages 306.**

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   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

A. Learning should be iterative. More often than not, learning something challenging takes several attempts. With the Feynman Technique, returning to the source material is an explicit part of the learning process. When gaps in our knowledge arise and our explanations aren't quite right, revisiting our primary and secondary sources can help solidify what we're learning.
B. Getting it right will likely take several iterations. That's a good thing; the more you refine your explanations, the more your understanding will deepen. Learning becomes an iterative process. Rather than viewing learning as one-and-done, this step gives you permission to continuously refresh your knowledge.
C. You're actively engaged. Using sources to polish our own explanations and models is an active process. When we learn passively, committing details to memory is more challenging. When we're actively part of creating our own summaries and reasoning, drawing intentionally from original information to fill our blind spots, we can more readily commit knowledge to our long-term memory.
D. You expand your knowledge base. Paradoxically, the more we learn, the more *our capacity* to learn increases. Looking through a chapter of a textbook might feel like a different language the first time around. The second time it becomes more clear. The third time, with a strong base already, we pick up nuances we couldn't have possibly seen before.

VIII. Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

IX. Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

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F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

X. Reflect, Refine, and Simplify.

A. Only when you can explain the subject in simple terms do you understand it.

B. Simple is beautiful.

C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

E. Go back to the source material, reviewing the parts you don't quite understand yet.

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C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

IX. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

Trust the Quiz-and-Recall Method

Whether it's philosophy or calculus, the most effective way to imprint a concept is to first review it and then try to explain it, unaided, in your own words. If you can close your eyes and articulate an argument from scratch, or stare at a blank sheet of paper and reproduce a solution without a mistake, then you have fully imprinted that concept. It's not going anywhere. The same is not true if you merely read over something. Passively reviewing a concept is not the same as actively producing it. Most students make the mistake of relying only on passive review; they read and reread their notes and assignments, and assume that the more they read, the more they will remember. But as Ryan from Dartmouth warns: "Simply reading it over doesn't work. You have to make the extra effort to get it into your head."

Using the Quiz-and-Recall Method for Nontechnical Courses

To apply the quiz-and-recall method to nontechnical course material, you first need to construct a practice quiz for each chapter in your study guide. Fortunately, the questions for these quizzes already exist, since, if you've followed the advice of Steps #1 and #2, all of your notes should be in a question/evidence/conclusion format.

Therefore, the quiz for any given chapter can simply contain all of the questions from the notes you took for that chapter. You can be flexible here. If your notes contain some really broad questions—for example, an entire lecture that deals with only one idea—break them up into several smaller questions that, together, cover all of the relevant points. On the other hand, if your notes have a bunch of really small questions, you can combine some into larger questions to save space and time. This process is not an exact science; your goal is simply to produce practice quizzes that cover all the material contained in each corresponding chapter. If you can answer all the questions, then you understand all the big ideas. Once you've built your practice quizzes, go through them one by one. For each question, try to articulate the matching conclusion and provide some highlights from the supporting evidence. You don't have to reproduce the material in your notes word for word, but you do need a reasonable summary of the big idea and its support. Here's the important part: Don't do this only in your head! If you're in a private location, say your answers out loud using complete sentences.

However, if you are forced to review with other people around and you need to be quiet, then you can write out your answers. “The physical act of writing and the manipulation of the material in my mind was usually enough to keep things straight,” explains Melanie, a straight-A Dartmouth student. You don’t have to format these responses perfectly with correct spelling and grammar, but they must contain all of the pertinent information. No shortcuts. If you don’t say or write it, don’t consider it fully reviewed. Next, put little check marks on your quizzes next to any questions that you had trouble answering. Glance through your study guide to remind yourself of the right answers to these questions. Take a quick break.

Now, repeat the first step, except this time you need to answer only the questions that you marked during your first run-through. Put a new check mark next to the questions that you still have trouble with. Once again, look through your notes to get the right answers, and then take a quick break. Then go back to the practice quiz and try to answer the questions that you marked on your second run-through. You get the idea. Repeat this pattern until you complete a run-through without adding any new check marks. At this point, you’re done!

Using the Quiz-and-Recall Method for Technical Courses

The quiz-and-recall method is easily applied to technical courses. You already constructed your mega-problem sets; now you simply need to solve them. Start with the technical explanation questions—thinking about the general concepts first will make it easier to solve the specific sample problems that follow. As with nontechnical courses, try to provide an articulate answer for each problem, and if possible, give your explanation out loud, as if lecturing to a class. Otherwise, write out your answers clearly. Don't skip any important details. Once you're done with the technical explanation questions, move on to the sample problems. Try to answer each. Again, don't do this in your head. "I don't just read the material," explains Worasom, a straight-A student from Brown. "I write the important equations and concepts out by hand." Your solutions don't need to be as detailed as if this was a real assignment, but they should clearly demonstrate that you know what you're doing. If you can't explain exactly how you got from the question to the answer, then you don't yet understand this problem. Be honest with yourself: If you're just regurgitating memorized solutions, you aren't prepared to handle new questions on a test.

Memorize over Time

If you have material that must be truly memorized— dates, artists, chronologies, formulas —there are, unfortunately, no real shortcuts. You just have to keep working with your flash cards until you have no trouble providing the right answer, even after you shuffle the cards into a random order.

Memorization is particularly dependent on your available mental energy. It doesn't work if you try to commit items to memory for eight hours straight, but it does work if you memorize only an hour at a time and only one or two hours a day. So separate the task of memorizing from your other review. Spread the work out over many days, and never dedicate too much time to any one sitting with your flash cards. Melanie from Dartmouth recalls how some of her peers would "review their flash cards at any opportunity—eating dinner, waiting in line at an e-mail terminal," which is the most effective way to get through this tedious task and commit the necessary items to memory.

Step 5 Invest in "Academic Disaster Insurance"

Straight-A students have a knack for avoiding rogue questions. It's as if they invest in some sort of academic disaster insurance: protection against the unexpected return of those obscure topics that slip by when you doze off for a moment in class. In reality, this insurance policy is nothing more than a simple strategy: Eliminate your question marks. This technique can be employed throughout the term and, over time, significantly reduce the chance that you will be baffled by an unexpected exam question.

Eliminate Your Question Marks

In Step #1, we covered smart techniques for taking notes in class. If you remember, this strategy suggests that you put a question mark in your notes for any topic that flies by without you really understanding the conclusion. This will occur occasionally in both technical and nontechnical courses—sometimes as the result of your attention wandering and sometimes as the result of the professor heading off on a tangent and not offering a satisfactory explanation.

These question marks are dangerous. As Christine from Harvard puts it, by skipping a point made in a lecture, "you're gambling with the possibility of being truly in the dark on the exam." The scenario is simple. During the semester a few topics slip past your attention in class, so you end up with a handful of question marks in your notes. When it comes time to study, you have more than enough big ideas that you do understand, and that you need to review, so the occasional question-marked topic gets ignored. You enter the exam feeling prepared, and then, as luck would have it, you find yourself face-toface with a big essay question covering one of those bypassed concepts. Whoops. To prevent this from happening, you need to eliminate these question marks. The key is to start this process well before the exam. If you leave all of these question marks unanswered until you start studying, you will end up spending many extra hours looking up the required explanations. Learning a large quantity of material from scratch during the review process is a mistake made by average students—and you should avoid this. Instead, try to knock off question marks as soon as they arrive. By the time you begin studying you should, as

Robert, a straight-A student from Brown, explains, “have at least a vague understanding of every topic that will be covered on the exam.” The following four tactics, if used regularly, will help you achieve this goal. They provide a solid defense against unclear ideas and will allow you to start the study process with an explanation in mind for all relevant topics.

- Ask questions during class. “When in doubt, I just ask questions in class for more clarification,” explains Worasom from Brown. If a topic slides by you, raise your hand and ask for a clarification. The more question marks you eliminate on the spot, the less work you will have to do later.
- Develop the habit of talking to your professor briefly after class. “Talk to the professor after class, or send him an email asking for clarification about questions that arose during his lecture,” suggests Jason from Penn. There is nothing unusual about this. Most professors will stick around for five or ten minutes after the bell to answer final questions. Take advantage of this time. When the class ends, head over to the professor and see how many of the question marks of the day you can get eliminated. You should then immediately correct your notes before you forget the explanations. Will this turn you into a brown noser? No! The brownn osers are those who come up to the professor only to tell him what parts of the lecture they found interesting, or to offer up some of their own “brilliant” thoughts on the topic. You, on the other hand, have a list of focused You, on the other hand, have a list of focused questions that you want answered, which makes you seem smart, not snivelling.
- Ask classmates. If you’re still unclear, James, a straight-A student from Dartmouth, recommends that you “talk with other people about the topic.” Send an e-mail or corner them in the hall soon after the lecture. If they understand the topic, it will take them only a few minutes to explain it to you while it’s still fresh in their minds.
- Come prepared to exam review sessions (if offered). Many classes offer a formal review session the week before the exam. Go to these. Before you arrive, jot down all of the topics from your notes that you are still unsure about. Then, during the session, try to get all of them answered. Don’t be worried about having a lot to discuss. More often than not, review sessions suffer from too few student questions, so your professor or TA will appreciate your preparation.

The goal of these defensive tactics is to eliminate your question marks without adding any study time. If, however, despite your best attempts, some of these unclear topics persist until your review, your last-ditch defense is to skim. You probably won’t have time at this

defense is to skim. You probably won't have time at this point to look up detailed explanations from scratch for every leftover question mark. And, even if you did, the effort would be way too time consuming (remember: Straight-A students avoid long study hours), so skim over just enough material to have something to say for each of these points. On the off chance that one of these lingering question-marked topics comes up on the exam, at least you won't leave a blank page. But this situation can still be dangerous, so follow the first four strategies to reduce the topics you don't understand as much as possible before your studying begins.

Step 6 Provide “A+” Answers

Even the most prepared student can bomb an exam due to poor test taking skills. The potential pitfalls during an exam are numerous, but the most common are: (1) running out of time and (2) providing answers that, although detailed, don’t fully answer all parts of the question being asked. In fact, these two dangers work together in a devilish counterbalance, making them particularly hard to conquer. That is, if you try to avoid spending too much time on questions, then you are likely to provide time on questions, then you are likely to provide

incomplete answers. On the other hand, if you try to provide detailed answers, then you are likely to run out of time.

The situation sounds dire, but it’s not. With the right strategy, you can eliminate these fears and ensure that your grade properly reflects your level of preparation. Straight-A students recognize this point, and when asked about test-taking, they provided detailed responses, proving that for them, this final step is no mere afterthought. They treat the test-taking process with great respect, and this attention is reflected in their consistently high grades. Their advice has been culled into five key strategies. Together, they provide a comprehensive test-taking system, finely tuned through experience to maximize performance. Follow these rules on every exam, and you’ll be able to transform yourself into a test-taking machine—cool, confident, and ruthlessly efficient as you move from question to question, providing the best possible answers.

Strategy #1: Review First, Answer Questions Later

“I always read through the entire exam first,” explains Robert from Brown. This is good advice—for any exam, your first step should always be to review all of the questions. If it’s an essay exam or a technical exam with a relatively small number of questions, then read each prompt carefully. If the exam is multiple choice or contains many questions, skim through quickly and get a feel for which topics are covered. This review familiarizes you with the length and relative difficulty of what lies ahead. It also primes your brain for the topics you’ll need to address. “Always scan all the questions,” explains Anna from Dartmouth. “This allows your mind to think about all of them, even while you are focusing on one in particular.” In other words, while you toil away on an early question, another part of your brain, working in the background, will begin to retrieve information relating to the topics still to come. This actually happens, and it helps you answer the later questions more quickly.

Finally, and perhaps most significantly, this first step also helps you relax. Stress proliferates in a classroom right before an exam is distributed. It’s a make-or-break situation. Months of effort have led up to this single moment, and you have only a scant hour or two to prove what you know and secure your final grade. You begin to question yourself. Did you study everything you needed to? Have you forgotten important ideas? What if the to? Have you forgotten important ideas? What if the exam focuses on a subject you know nothing about? If you left it blank, what would happen then? Just thinking about this situation is enough to make most undergrads sweat.

However, by taking the first few minutes to carefully review the exam, you break this mounting tension. It gives you something productive to do that doesn’t involve actually answering questions. Once you complete this task and build a better idea of what to expect, the exam becomes less menacing. You’ve seen the questions, and (hopefully) none seem impossible. You begin to say to yourself: Okay, maybe this isn’t all that bad. Your confidence rises, your heart rate lowers, and your stress begins to dissipate. Now you can turn your full attention to providing standout responses.

Strategy #2: Build a Time Budget

At any given point during an exam, you should know the maximum number of minutes you have to spend on the current question before moving on to the next. As Doris from Harvard puts it: “I lay down very strict time limits for myself on each question.” This strategy goes a long way toward avoiding time trouble; it keeps your attention focused and prevents you from spending too much time on any particular question. The key to maintaining this keen awareness is to build a time budget. First, take the time allotted for the exam and subtract ten minutes. Next, divide this amount by the number of questions. The result is how long you have to spend on each prompt.

What should you do with this information? For an exam with a small number of questions, mark right on the test pages the time when you should begin and finish each one. For an exam with many questions, divide the exam into equal fourths, then jot down the time you should begin and end each section. In both cases, these recorded times will keep you updated on how close your current progress matches your predetermined schedule. Why do we subtract ten minutes in the first step? This provides a safety buffer. You want a few extra minutes available here and there to be able to double check your answers when you are finished, or go back and add more insights to questions on which you were rushed

Strategy #3: Proceed from Easy to Hard

Straight-A students almost never answer exam questions in the order that they are presented. Years of informal experimentation by successful students have demonstrated that the most effective way to tackle an exam is to answer the easiest questions first, and this is exactly what you should do. Start with the most approachable questions before moving on to the more forbidding. Don’t worry if this has you skipping around all over the exam—in most cases the provided order is irrelevant. The advantage of this approach is that it first focuses your energy on the questions you know the most about, ensuring that you get maximum points on these. It also gives you a better chance of conquering the more difficult ones. “I always skip a question if it does not come to me immediately,” explains Ryan from Dartmouth. “This keeps my mind clear to answer other questions and hopefully something will jog my memory.” When you come across something hard early on in the exam, your natural instinct is to panic. You have so many more questions to finish, and you can almost feel the minutes ticking away as you stare blankly at this one particular

roadblock. It can be tough to get your focus back to wring out as many points as possible from the easier questions that follow. If, instead, you tackle this same roadblock at the end of the exam, you'll find that the situation seems less dire. You've answered everything else, so all that's left to do is working out this final puzzler. More often than not, you will find the mental block diminished. Without the pressure of other questions looming in the background, you can take a more relaxed approach. You might not know the best answer, but you can spend some time to devise a reasonable answer. Because you have nothing else left to finish, you can spend the remainder of the time polishing this answer, thinking, and repolishing. The result is the strongest possible outcome given your state of preparation.

Strategy #4: Outline Essays

When facing an essay question, don't just start writing and see what happens. This approach leads to rambling answers and missed concepts. Instead, your first step should be to jot down a quick outline. This might seem like a waste of time, but in truth it can be invaluable.

First, reread the question carefully. As Matthew from Brown explains: "Usually, you can isolate three or four mini-questions from a single essay question." Underline each of these mini-questions; this will help you flesh out your outline and avoid an incomplete answer. "Then, outline on paper (not in your head) the way that you will use what you know to answer these mini-questions," continues Matthew. To do so, use the margin of the exam to jot down all of the points you can recall that are relevant to the question. Record only a few key words for each point to save time and space. For example, if you want to mention an argument made by an author named Robert Caro dealing with Lyndon Johnson's views on race relations, you might jot down: "Caro—race." Next, go back and check the question parts you underlined in the first step. Make sure each is adequately addressed by the points you just noted in the margin. When you're sure that you have identified all the relevant information for the essay, number these points in the order that you want to present them. Only now should you begin writing your essay. Follow your outline, and the writing will proceed smoothly. You should be able to quickly produce a solid response that draws on everything you reviewed and addresses all parts of the question asked.

Strategy #5: Check Your Work

Advice and go back and check your work. You will be surprised by how many times this final review turns up a mistake in a technical problem or an important concept that you forgot to mention in an essay. If, after your first round of review, you still have time left over, then go through and check again. If there is a problem you feel particularly shaky on, use this time to go over it in detail, augmenting the answer wherever appropriate. Don't worry about using carets and arrows to add in new phrases and facts to your essays, or to point out added steps in your technical problems. Neatness doesn't count on exams; it's the content that matters. It's tempting to relax after finishing your exam, perhaps walking proudly to the front of the classroom and handing it in before anyone else. But aside from the wistful stares of your classmates, this strategy is ill conceived. Double checking your work up to the last minute can make the difference between an above-average student and an academic star.

Part Two Cheat Sheet

Step #1. Take Smart Notes

- Always go to class and try to take the best notes possible.
- For nontechnical courses, capture the big ideas by taking notes in the question evidence/conclusion format.
- For technical courses, record as many sample problems and answers as possible.

Step #2. Demote Your Assignments

- Work a little bit each day on your assignments; avoid suffering from day-before syndrome.
- Read only the favored sources on the syllabus in detail. To decide how much time to spend on supplemental sources, remember the importance hierarchy: – readings that make an argument are more important than – readings that describe an event or person, which are more important than – readings that only provide context (i.e., speech transcripts, press clippings).
- Take reading notes in the question/evidence/conclusion format.
- Work in groups on problem sets, solve problems on the go, and write up your answers formally the first time.

Step #3. Marshal Your Resources

- Figure out exactly what the test will cover.
- Cluster your notes for nontechnical courses.
- Build mega-problem sets for technical courses.

Step #4. Conquer the Material

- Embrace the quiz-and-recall method. It’s the single most efficient way to study.
- Spread out memorization over several days. Your mind can do only so much at a time.

Step #5. Invest in “Academic Disaster Insurance”

- Eliminate the question marks for topics covered in class or from the reading that you don’t understand.

Step #6. Provide “A+” Answers

- Look over the whole test first.
- Figure out how much time you have to spend on each question (leaving a ten-minute cushion at the end).
- Answer the questions in order of increasing difficulty.
- Write out a mini-outline before tackling an essay question.
- Use any and all leftover time to check and recheck your work.

Essay and Papers

Paper writing is hard, but the good news is that it doesn’t have to be as hard as most students make it. Let’s begin by taking a closer look at the paper-writing process itself, which can be broken down into three separate components:

1. Sifting through existing arguments.
2. Forming your own argument.
3. Communicating your argument clearly.

The sooner you dispel the notion that writing is the most important part of paper writing, the easier it will become for you to reap the benefits of the straight-A approach.

Research Papers vs. Critical Analysis

Essays

Writing assignments come in many varieties. Some require a lot of original research, whereas others require only a critical discussion of a topic introduced in class. Some have ulcer-inducing length requirements, whereas others ask for only a handful of pages. We capture these differences with the simple classification scheme of research papers versus critical analysis essays. Some assignments, of course, may fall outside of these two descriptions, but, for the most part, they capture the major variations in paper writing. All of the advice that follows explicitly describes which of these two types it applies to.

Research Papers

A research paper requires you to choose a topic within provided parameters and then devise an original thesis relevant to your chosen topic. For example, the broad parameters for your topic choice might be “anything involving the British Empire,” the specific topic you choose from within these parameters might be “public schools and the British Empire,” and the thesis you choose might be “the public school system in nineteenth-century England had a curriculum specifically tailored to the requirements of the British Empire.”

Research papers require original research to support your original thesis, and, accordingly, their page lengths are long and their due dates are generally a ways off from when they are assigned. If you spread out the work appropriately and choose the right topic, research papers can provide a rewarding intellectual challenge. Proposing and supporting an original argument is exciting. However, if left until the last minute, these assignments can become a nightmare. More than a few students have suffered a nervous breakdown from the stress of tackling a major research paper at the last moment. So for these assignments in particular, take careful note of the scheduling recommendations that follow.

Critical Analysis Essays

Critical analysis essays are the bread and butter of most liberal arts classes. These essays are short, and they typically require you to analyze one or more of your class reading assignments. They are often set up as a comparison, for example: “How do Nordlinger and Hopkins differ in their approach to understanding American Isolationism. What cultural and theological sources account for these differences?” Critical analysis essays differ from research papers in several significant ways: Topics are provided in advance, your thesis is nothing more than a specific answer to the question asked in the assignment, and there is little-to-no original research required. Not surprisingly, these essays require less time to complete than research papers. Their goal is to test your understanding of the material presented in class, not to seek out and present new ideas. Don’t get the wrong idea—these essays are not necessarily easier than research papers. College writing assignments follow a simple rule: The required precision of your thinking works in direct proportion to the constraint of the material. That is, the more specific the assignment, the more subtle and detailed your thinking must be. So beware. If your assignment covers only one chapter, then you’re going to need to understand every word of that chapter and be able to articulate your analysis with precision.

Step 1 Target a Titillating Topic

Remember: A topic does not equal a thesis. A topic describes an interesting subject or area of observation. A thesis presents an interesting, specific argument about that subject or observation. Let's look at some examples As mentioned, for a critical analysis essay, the topic is provided, so this step won't be applicable. For a research paper, however, you get to choose the topic— so we'll focus on the specific case of research paper topic selection for the remainder of this section.

Choosing a Research Paper Topic

Typically, the professor will provide some loose parameters. For an art history course, these might be: parameters. For an art history course, these might be: "Any artist covered in the class so far." For a political science class they might be: "Economic policy and Latin America." The key is to choose a topic, within the constraints of the assignment, that excites you. All work that follows on your paper will stem from this topic; if you are not intrigued by the idea, then the paper-writing process will be tedious. If, on the other hand, you are fascinated, or at least curious, then the process will be that much easier. The best way to identify a titillating topic is to start looking for one early. "I work on topic ideas in my head and on scraps of paper beginning anywhere from a week to a month in advance of the actual deadline for a paper," explains Doris, a straight-A Harvard student. Follow this approach. On the very first day of class, read the description of the research paper(s) that will be assigned. The syllabus should describe each paper's topic parameters, and the professor will usually discuss these assignments briefly early on in the term. Once you know the parameters for the paper, you should constantly be on the lookout for a particular subject or observation that interests you. If one reading assignment really grabs your attention, jot down the topic so you'll remember it later. If a professor poses an interesting question during class, or piques your curiosity by describing a compelling open area of research, make a note of it. As Sean, a straight-A student from Yale, explains: "Keep an eye out for concepts that interest you in the readings and lectures. If there's something that grabs you, it will probably make a good topic." If you have trouble finding a topic in advance, you have two options. First, as Chien Wen, a straight-A student from Dartmouth, advises: "Approach your professor with some ideas you have and let him recommend some appropriate readings." Professors knows their field well, so they should have no trouble pointing you toward some resources to help flesh out your initial thoughts. Second,

as Chien Wen also advises: “Read your primary sources carefully.” Grab a textbook or similar general source from the class, and then skim through and look for angles that catch your attention, passages that make you ask “why,” or descriptions of competing arguments debating an interesting subject. “Be imaginative and intuitive—look for unusual connections between individuals, ideas, and broader themes,” says Chien Wen. In general, the more care you take during this first step, the easier the rest of the paper-writing process will be, so take your topic choice seriously.

Step 2 Conduct a Thesis- Hunting Expedition

You need to construct a thesis that makes a compelling argument concerning this topic. Once again, for a critical analysis essay, most of the work toward constructing your thesis has already been done for you. Typically, the essay prompt will contain a specific question (i.e., “How do the two arguments differ?” or “Why does the author say this?”), and your thesis is a summary of your answer. For a research paper, on the other hand, you might be dealing with a very broad topic that requires significant digging to find an interesting and supportable idea that can be expanded to fit the required page limit. In both cases, some initial research is required. A thesis devised from scratch is dangerous. Without some initial exploration, you have no idea whether or not your idea is viable, and there are few experiences worse than being forced to restart a paper after many hours of work. At the same time, however, you don’t want to dedicate days to intensively reading every book in the field in search of a perfect thesis, because this would be inefficient. For a critical analysis essay, the solution is simple: Review both the reading notes and lecture notes that relate to the essay prompt. And that’s it! This should provide a rough idea of how you are going to answer the question posed by the assignment. Therefore, your thesis has been found. Even though it’s simple, don’t skip this step for critical analysis essays. The earlier you develop an idea of what you are going to say, the more time you have to refine the nuances of your argument. For research papers, on the other hand, the task of finding a thesis is more complicated. No sources have been preselected for you, and no specific question has been provided. All you have is a general topic that you thought up yourself. Now you must wade into a vast sea of knowledge and somehow find enough material to devise a strong thesis—while avoiding drowning in the sheer volume of available information. Not surprisingly, the straight-A students interviewed for this book have mastered the art of conducting research paper thesis-hunting expeditions. Their goals are twofold: (1) find an interesting thesis that can be supported within the scope of the assignment; and (2) minimize the time required to conduct this search. Accomplishing both of these goals sounds hard, but straight-A students get it done. What’s their secret? One simple phrase: Start general, then move one layer deep. Let’s take a closer look at what this really means. Start General, Then Move One Layer Deep “I usually begin with basic sources,” explains Chris, a straight-A student from Dartmouth. “If I’m doing a paper on the Kurds in Turkey, for example, I get a recently published general history on this topic.” Similarly, if your topic is Faulkner’s early writing, you might find one or two Faulkner biographies and then focus only on the chapters dealing with his early years. If you have a

hard time finding a few general sources for your topic, then ask your professor—he'll have plenty of titles to recommend. In addition, keep in mind that most courses set up a reserve shelf at the campus library. This shelf contains books that were selected by the professor because of their relevance to the course. Typically, you can check out reserve books for only a couple of hours at a time, so they should always be available to the students who need them. This is a great place to find general sources. So that's step one (the "start general" part of the strategy). The reason we need a second step is because you shouldn't expect to find your thesis idea in a general source. Of course, you might get lucky and find an interesting thesis during this first step. In general, however, overview sources will be much too broad to reveal a targeted and interesting argument that hasn't already been written about extensively. The main reason you found these general sources is to get at their bibliographies. As Chris goes on to explain: "I read any chapters from my general sources that look useful for my paper. I then look up the sources used in that chapter." In other words, the second step of your thesis-hunting expedition is to examine the list of books and articles cited in the relevant sections of your general sources. From this list, choose the cited works that look the most promising, and then go find them in the library. These sources will be more focused— perhaps journal articles or books addressing only a small number of specific arguments. You are most likely to come across an interesting and appropriately targeted thesis idea using these more focused sources. Let's apply this approach to our Faulkner example from before. Perhaps one of our general sources cites a journal article on the influence of a specific European modernist writer on Faulkner. You find this journal article, and while reviewing it you notice that it mentions, in passing, a list of other modernist writers who might have had a similar influence. Aha! Now this could be an interesting thesis. You might choose one of these modernists from the list and then look for historical evidence of their connection to the primary writer. Perhaps, instead, one of the general sources talks about a period of Faulkner's life that he spent in Europe. Maybe it also mentions that our only records of this travel are letters written by the young author himself, and then it provides a citation to a collection of these letters. You then locate these letters, begin to read through them, and notice that he mentions a particular bar in London several times. This too might be a source of a fascinating thesis. You could investigate the intellectual climate of London nightspots of the time and posit their potential influence on Faulkner's work. From there, perhaps the core of your paper could be to present a piece of writing from right before the trip, and another from right after, and then argue which stylistic changes may have been influenced by his foray into the intellectual intensity of the London literary milieu. The key is to keep in mind that even very small observations can

lead to large, interesting discussions. How do you know your thesis idea is good enough to support an insightful paper? “A great thesis typically has at least these four qualities,” explains Christine, a straight-A student from Harvard. “It’s provocative, nuanced, direct, and inclusive.” She goes on to warn: “A thesis should, at the same time, also show a grasp of the complexities of a subject—‘in this poem, X symbolizes Y because Z’ is a weak type of thesis structure, far too reductive and simplistic—don’t be afraid to leave room. for ambiguity and unresolved issues.” Wendy, a straight- A student from Amherst, puts it simply: “The most important part of your paper is the thesis. Once you have a solid thesis, the rest just falls into place.” Here’s the tricky part: Your thesis will change and evolve as you continue the paper-writing process. This is inevitable, because you haven’t done your exhaustive research yet. At this early stage, your thesis more likely explains the type of connection or answer you hope to find, rather than the final connections and answers themselves. To revisit our Faulkner example, your early research may indicate that the social milieu of a certain London nightspot influenced a young Faulkner, but you might not yet know all the ways this influence was manifest. More research is required, and that’s okay. You should embrace this evolution of your ideas as the process continues. For now, it’s sufficient that your fledgling thesis looks like it’s on the path toward fulfilling the properties mentioned above. In other words, before continuing, make sure that your preliminary research strongly indicates that something similar to your thesis idea will be supported by the more detailed investigations to follow. Be honest with yourself: If you made up your thesis simply because it sounded cool, but have no real reason to believe it to be true, then you’re courting a paper-writing disaster. If, on the other hand, several pieces of early evidence point to the types of interesting connections described by your thesis, then you’re on the right track.

Step 3 Seek a Second Opinion

At this point you should have an interesting topic and a targeted thesis. You're well on your way toward a standout paper, but don't get too far ahead of yourself. It's time to take a step back. More than a few students have dived deep into the paper-writing process, supported by what they thought was a compelling thesis, only to find out many pages later that their premise was not as strong as it initially seemed. Perhaps they fail to find enough evidence to support the argument. Perhaps they stumble across another source that has already made the exact same point. Or, as is often the case, perhaps they find their thesis to be too broad to be succinctly argued within the scope of a paper assignment. The thesis-hunting tips of the last step help eliminate this possibility, but they're not enough by themselves. Once you think you have a good thesis, a final step remains before diving fully into the research and writing process. As Rielle, a straight-A student from Brown, explains: "I often talk to a professor to clarify my ideas before I begin writing." This is great advice. For every research paper and significant critical analysis essay (i.e., assignments more than just a few pages long), you should make a habit of discussing your targeted thesis idea with your professor. Go to office hours, or make an appointment, explain your topic and thesis, then ask the following questions:

1. *Is my idea appropriate for the assignment?*
2. *Does it cover too much?*
3. *Is it too simple?*

For a critical analysis essay, if the professor deems your thesis appropriate, this is a good sign that you are not going to get stuck. You can now move ahead with confidence. For a research paper, if the professor deems your thesis appropriate, take advantage of this time to explain some of the sources you plan to examine. The professor will likely have some additional sources to suggest. Write these down. This just saved you some suggest. Write these down. This just saved you some serious research time! For both types of papers, if the professor isn't enthusiastic about your thesis idea, then he or she will likely help you adjust it into something that is reasonable. When you leave this meeting, which should require only ten to twenty minutes, you will have confidence in the foundation of your paper. You can now move full speed into the research stage without fear of reaching a devastating dead end later on in the process. It's amazing how many students ignore this incredible resource. One simple meeting can make the difference between a standout work and an incoherent dud. Remember, this step is not intended as a shortcut. If

you skipped the previous step and show up at office hours without a targeted idea, the professor is not going to give you one for free. However, as Christine from Harvard explains: “They’ll rarely refuse to listen if they see you’ve thought things out in advance.”

Step 4 Research like a Machine

Not surprisingly, research is the domain of the research paper. For a critical analysis essay, your sources are already specified, and there are probably only one or two of them. Therefore, when working on an essay, you can skip this step and move on to Step #5 (Craft a Powerful Story), which describes how to organize your argument. For research papers, however, the following advice is crucial. Why? Because how you research can make or break your paper-writing efforts. If your strategy is haphazard—as is the case with most students—then two immediate problems will arise. First, the writing process will become frustrating and tedious, since you will be forced to continually stop and seek out new sources to extend your argument. Second, and more important, the resulting paper will be weak. A good argument requires a solid grasp of all relevant information. You want all the necessary facts and ideas to be at your fingertips, easily manipulated, sourced, and shuffled, as you build your case. If your sources are incomplete and disorganized, then your paper will be, too. On the other hand, you can also run the risk of spending too much time on research. Many eager students have succumbed to the horrors of research recursion syndrome—an unhealthy need to go find "just one more source," often leading to hours and hours of wasted time, dorm rooms overwhelmed with teetering stacks of books, and one seriously sleep-deprived student. This is grind territory, and you should avoid it at all costs. So while at first glance it may seem easier than choosing a thesis or writing the paper itself, in fact the research step of paper writing is easy to get wrong. Fortunately, straight-A students have figured out a way to walk the research tightrope—getting the information they need without becoming lost amid the endless available sources. Their strategy can be summarized by a simple phrase: Research like a machine. They follow a system—a mechanical process, the same for every paper—that produces consistent high-quality results. Feed them a thesis, watch their wheels turn, and then out pops a set of photocopied, organized, and annotated notes. Their system ensures that the quality of their research is sufficient to fuel a standout paper and at the same time requires the minimum amount of time to achieve this goal. Sounds pretty cool, right? But how does it work? Their system is based on these four steps:

1. *Find sources.*
2. *Make personal copies of all sources.*
3. *Annotate the material.*
4. *Decide if you're done. (If the answer is "no," then loop back to #1.)*

That's it. The devil, of course, is in the details. So let's take a closer look at what each of the steps entails.

1. Find Sources

There are two types of sources: general and specific. As described in Step #2, the former include overviews of your topic (i.e., biography or textbook), whereas the latter focus on specific arguments (i.e., a journal article or book about a specific event or idea). For a college-level paper, most of your best information is going to come from specific sources. The hard part, of course, is finding them.

Step #2: Start with general sources and then look in their bibliographies for more targeted resources.

As David, a straight-A student from Dartmouth, says: "Once you have two or three materials that you like, it's all about the bibliographies…find out where the author found the fuel for his arguments and go check those out." In Step #2, I suggested that you ask your professor or browse the course reserve shelf to find some of these general sources. Another place to look is your library's online card catalog. This sounds obvious, but using an online catalog correctly is not a trivial task. Just typing in keywords might not turn up every book that deals with your topic of interest. You need some more advanced tricks. One such trick is to take advantage of the Library of Congress (LOC) topic classifications. What are these? The Library of Congress tries to classify all books into one large hierarchy of topics. For example, Heinrich Harrer's fascinating book The White Spider (an account of the first team to ascend the infamous North Face of the Eiger Mountain) is described by the following two classifications:

1. **Mountaineering—Switzerland—Eiger—History**
2. **Eiger (Switzerland)—Description and travel**

When you find a book in an online card catalog, its corresponding LOC topic classifications should be listed. The cool part is that these topics should also be hyperlinked. That is, if you found an entry for The White Spider, you could click on Mountaineering—Switzerland—Eiger—History to return a list of every book in the library under this classification. Therefore, if you find one general source on a topic, then you can easily find many others. And once you have found general sources, you can turn to their bibliographies to find something more specific.

The second strategy for finding specific sources is to search for them directly. This approach is important. Not every specific source relevant to your thesis can be found in the bibliography of a general source. This is particularly true for more recent scholarship. Books take a long time to write; if a paper was published only within the last few years, it is

probably too soon to find a general tome that cites it. The problem here is that specific sources can be difficult to find. For example, continuing with the Eiger topic introduced above, let's say your thesis within this topic is: "The many failed attempts to ascend the North topic is: "The many failed attempts to ascend the North Face of the Eiger played an important role in the development of Swiss cultural identity during the first half of the twentieth century." Finding a general source about the Eiger, such as The White Spider, is easy enough. But finding a targeted source on the impact of the Eiger on Swiss cultural identity will be significantly more complicated. Simply typing "the impact of the Eiger on Swiss cultural identity" into the library card catalog probably won't turn up many hits. So how do you locate these elusive specific sources? There are four main search tactics.

Search Tactic #1: Break Up Your

Query into General Chunks If you can reduce your specific query to a group of related, yet succinct, general searches, you will have a much better chance of finding a relevant source. Following the Eiger example, you might try:

- Alpine hiking Switzerland culture
- Switzerland cultural identity
- Alpine hiking
- Mountaineering Switzerland

Any one of these more general queries could turn up a source that either directly references your thesis or makes a point that supports your thesis. With practice, you will get better at constructing these general probes aimed at illuminating a specific idea.

Search Tactic #2: Use Journal Databases

As mentioned, specific sources are more likely to be scholarly articles than books. Your library card catalog does not index articles. Therefore, as Chris from Dartmouth recommends, you should consider "article database searches (like JSTOR) on the specific topic." How do you find these databases? Your library Web site should contain a list of available electronic resources. At some point during your freshman year, you will probably be given an orientation on this topic. (Even if you sleep through it, as most of us do, it shouldn't be that hard to figure out.) This list of resources is usually broken up by academic concentration (i.e., Political Science, Anthropology, and so forth). Go to the concentration relevant to your paper, and you should see a list of searchable archives. Many of these resources will be databases of scholarly articles, so search these focused

databases using the general search term chunks described in the preceding tactic and see what pops up. If your topic is interdisciplinary, meaning that it draws from multiple academic concentrations, follow Chris's advice and try a big database like JSTOR (http://www.jstor.org), which contains scholarly articles on a large variety of academic topics.

Search Tactic #3: When in Doubt, Google

"Google is your friend, first and foremost," says David from Dartmouth. This is good advice—as Google is a great tool—but it should be used with some caution. A good rule of thumb is: Don't cite Web sites. Academics don't trust them. Journal articles go through extensive peer-reviewing before they are published, and academic books are written by experts and rigorously edited. On Web sites, however, anything goes. Therefore, they're worthless in terms of supporting an argument. Referencing Web sites is something you do in high school. If you do this in college, be prepared to experience the wrath of your professor. This being said, Google is still immensely useful. Not for finding Web sites to cite, but for finding Web sites that reference books and articles relevant to your thesis. For example, a search for "Eiger and Swiss Cultural Identity" might actually turn up some Web sites dealing with, or related to, this obscure issue. The Google search algorithm is a lot smarter than the one used by card catalogs, so even very complicated queries can turn up surprisingly accurate results. If you're lucky, some of these Web sites will mention specific sources—a book name or article title. Now you can look up these in your card catalog, and then treat them like any other formal source.

Search Tactic #4: Ask a Librarian

Most college libraries are staffed with reference librarians who want nothing more than to help you find the information that you seek. It's what they're paid to do, and they're great at it. Too many students, however, ignore this wonderful resource. Here you have experts who can save you hours of struggle by conducting advanced searches on your behalf; yet most students never think to take advantage of the opportunity. Making a visit to the reference desk should be one of your first steps when researching a challenging assignment. Simply explain your topic and thesis to the librarian, and he or she will walk you through several searches. Not only will this identify some specific sources that you may have otherwise missed, but it will also expose you to new library resources and databases that you can now use for future projects. The more time you spend with reference librarians, the better you will become at finding solid material on your own.

2. Make Personal Copies of All Sources

How you handle the sources makes a big difference in the overall efficiency of the paper-writing process. Though there are many ways to deal with the book chapters and articles relevant to your research efforts, many of the straight-A students interviewed for this book favored the following strategy: Make a photocopy or printout of all relevant material. If you find a book that has two chapters related to your topic, photocopy those two chapters. If you find an important journal article, photocopy the entire article. If you find an article online, or a relevant Web site, print it out. The goal is to create your own personal hard copy of all sources. The advantages of this approach are numerous. First, these hard copies are portable. It's easier to carry around a stack of photocopies than a stack of books and journals, so you can take your research with you to your secret study spots or office hours. Second, the information is more accessible. No flipping through big tomes or searching your computer hard drive; all the relevant information is stored in one condensed stack. You can now physically organize your sources, for example, by putting them into piles by author, clustering relevant arguments together with paper clips, or dividing them into folders labeled by subject. As Sean, a straight- A student from Yale, explains: "It's often easier to grasp something when you have a hard copy in front of you." Third, you can mark them up with impunity. "Printouts and Xeroxes of source info are often superior to books or digital copies," explains Christine from Harvard, "since you can annotate them to death." Feel free to underline things, highlight, draw arrows, cross out sections, or put big stars next to important points. In general, this approach maximizes the control you have over your information, ensuring that your sources work for you. However, there are a couple of important caveats to remember. First, make sure you label each photocopy with all of the information needed to later construct a formal citation. For example, if you photocopy a book chapter, jot down on the first page the name of the book, the author(s), the publisher and its location, and the copyright date. Or, if you prefer, follow Christine's advice and simply "make a photocopy of the title and copyright info" as found in the front of the book, so you can use it later while constructing the works cited for your paper and ensure that you don't find yourself "running back to the library at the last moment for citation info." Second, photocopy each source's bibliography. This way, if you come across an interesting reference in one of your photocopies, you will have easy access to the full citation attached to the reference. For articles, the bibliography is almost always listed immediately following the article. For books using the endnote format, you might have to flip to the back to find the bibliography for a specific chapter.

3. Annotate the Material

Finding a source, of course, is just the first step. A stack of photocopied pages is worthless if you don't know what information it contains and how it might be useful to your paper. You need to review the sources and annotate them with a concise description of the important information, if any, that they contain. Be careful how you proceed here. Your first instinct might be to follow the advice described in Part Two about how to take notes on your reading assignments. Don't do this—it's overkill. For now, you should be content to follow the advice of David from Dartmouth, who recommends **that you "skim, skim, skim.**"

Use The Following:

A. Skimming:

I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.

B. Entertainment

I. Method 1-Speed Reading. Pages 58-63.

C. Methods for Basic Knowledge For Deep Work or Bible Study.

I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.

II. Method 2-Use 80/20 Principle For Reading. Pages 67.

III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.

IV. Method 4-Flip Through Pages and Analyse. Page 69.

V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.

VI. Method 6-Devotional Bible Read. Pages 72-73

Specifically, read through the source quickly. Every time you pass by an important definition, idea, or opinion that seems relevant to your thesis, jot down (on your computer or by hand) the page number and a quick description. For example, if the author argues a particular point of interest, write only what this point is— there is no need to also copy down the evidence he uses to support it as you would for notes on a reading assignment. If the source is a book, then, as Anna from Dartmouth explains: "Pick out only the chapters that relate to the specific aspect of the topic that you are interested in…it is not necessary to read the entire book!" When you're finished, staple your annotations to your personal copy of the corresponding source. In general, proper source annotations should act as concise pointers, containing just enough information to show you where the relevant

arguments are hiding. In the next step, where you organize all of your gathered information into a coherent structure, these simple annotations turn out to be exactly what you need to quickly assess the importance of each source. Therefore, you will end up needing to carefully read only the passages that help your paper. You should not think of this step as adding work. As you will soon discover, these concise annotations are actually going to save you a significant amount of time.

4. Decide If You're Done

There is no simple answer to this question. While it would be nice to offer a perfect formula for how much research is enough, it is impossible—there are just too many variations to contend with. Some short papers might require dozens of sources, while some long tracts may focus entirely on a handful of original documents. What follows is a rough procedure that should aid your decision about whether or not you have gathered enough research. Remember, this is just an approximation. Always keep in mind the context of your specific assignment. However, this approach should help reduce the guesswork involved in completing this step.

The Research Termination Determination Procedure:

1. List the topics (specific questions, facts, or accounts from your research) that are crucial to support your thesis.
2. List the topics that might help you support your thesis.
3. If you have at least two good sources for each of the topics from #1, and have at least one good source for a majority of the topics from #2, then you're done. Otherwise, you need to keep researching.

The reason these criteria are just an approximation is because at this early stage you probably don't know exactly how your thesis argument will proceed, so you don't know exactly what information you need. This procedure simply helps you estimate as best you can. By separating out the crucial from the potentially helpful, you are less likely to get stuck hunting down an obscure piece of information that you could do without. This approach is advised by David from Dartmouth, who describes the following similar procedure for sorting his research sources: "I make three piles of my sources: very useful, potentially useful, and not useful." To draw from our previous example, if your thesis deals with the Eiger and Swiss cultural identity, you might construct

your list of “crucial” and “might help” topics as follows:

1**. Topics that are crucial to support the thesis:**

- Basic historical information concerning the Eiger (when it was discovered, when it was first climbed, and so forth)
- Arguments concerning Swiss cultural identity at the turn of the century

2. Topics that might be helpful in supporting the thesis:

- Memoirs of people who were involved in the first ascents of the mountain
- Press accounts from the time (both Swiss and non- Swiss)
- General discussions of the role of sports and national pride

If you have a hard time tracking down one of the topics from the second list, you would still be okay. If, on the other hand, you have a hard time tracking down either of the topics from the first list, then you need to keep looking. In the next step, where you actually begin to outline your paper, it’s expected that you might need to return briefly to the research phase and find additional sources to fill in any holes. If you follow the procedure above, however, you will minimize the amount of secondary research that you are forced to conduct—thus saving yourself from more hours in the library.

Step 5 Craft a Powerful Story

This step is where the magic happens. It's the fun part of paper writing—the moment of intellectual eureka. You have already defined (and verified) a compelling thesis, and you have at your disposal a collection of well organized and annotated research material. Now it's time to stretch your mental muscles and pull these pieces together into a powerful story. As Anna from Dartmouth says: "In order to write a great paper, you really need to make connections that other people haven't made, and the only way to do that is to think." This is the step where such thinking occurs.

Formulate Your Argument

"You must have a vision of what the overall structure of your paper will be," explains Frank, a straight-A student from Brown. "Organization of thought can make a decently researched essay into a fine piece of academic work." Formulating a solid argument, however, cannot be reduced to a system; it is a mental exercise that requires critical thinking and creativity. At the college level, there is no set structure that allows you to fill in the blanks and automatically produce a smart paper. As mentioned in the opening to Part Three, the intro, body and conclusion nonsense introduced in high school won't do you any good here. It's too simplistic, and your professors will be expecting more. In general, a good college-level argument should accomplish the following:

1. **Draw from previous work on the same topic to define the context for the discussion.**
2. **Introduce a thesis and carefully spell out how it relates to existing work on similar issues.**
3. **Support the thesis with careful reasoning and references to existing arguments, evidence, and primary sources.**
4. **Introduce some final prognostications about extending the argument and its potential impact on the field as a whole.**

There is, however, no set order or format for presenting these general points. One paper might start by defining the context and then move on to the thesis. Another paper might start with the thesis, argue it, and then introduce the broader context at the end. Many papers might interweave all four points. There is no right answer here. And the hard truth is that the only way to get better at organizing and presenting your thoughts is through practice. So write a lot and read good arguments a lot. This is the best recipe for

developing your skills for this step. That being said, there are some general pointers about how to go about formulating your argument. These aren't rules for what to say; rather, they are tips for how to get your brain fired up and your creative juices flowing.

Tip #1: When it comes time to craft the storyline of your paper, put yourself in the right mind-set. Grab a copy of Atlantic Monthly, The New Yorker, Harper's, or any other publication that features well crafted discussions. Peruse some articles, and then go for a walk along a quiet path. Alternatively, as David from Dartmouth recommends: "Talk to friends —if they are good friends they will allow you to bounce ideas off of them and talk through your work." You can also cloister yourself in a dusty. wooden-shelved, overstuffed-armchair-filled corner of the library, or argue with your professor during office hours. Reread related articles and chapters from your course syllabus. Watch a PBS documentary. Do whatever it takes to get the reasoning portions of your mind inspired and curious.

Tip #2: At this point, grab your source material from the previous step. If your assignment is a critical analysis essay, this will consist of only a couple of books and your reading notes. If it's a research paper, you might have a large stack of photocopied chapters and articles. In either case, dive into this information, and start letting the relevant facts and arguments settle into your mind. This is where your annotations will point you toward what's interesting, and help you avoid the irrelevant.

Tip #3: Take a break. Do something else. Let the pieces float around in the background noise of your mind. "The first thing I do when I have a paper to write is take a nap," explains Laura, a straight-A student from Dartmouth. "I crawl into bed and just think…as long as I'm thinking about the subject when I fall asleep, I will dream about the material and usually come up with some sort of interesting idea." Similarly, start looking for any opportunity to do a little thinking about your argument. "I think about my paper when I go around completing my daily chores, when I walk to class or when I wait on line in the dining hall," explains Anna from Dartmouth. Use this downtime to slide the pieces of your argument around in your head and play with the structure a bit. Keep returning to your research material as needed to find more details and to increase your understanding. You need to

expose yourself to the source material again and again to fully internalize it. Only then can you really pull together the best possible argument.

Constructing an Outline

You need an outline to capture the argument you just spent so much time devising. Keep in mind, however, that all outlines are not created equal. In fact, there are two major outline-related mistakes made by students.

First: under-outlining. If your outline lacks enough detail, it's not going to serve its purpose as a structure to guide your writing, and you will end up writing from scratch. You want to avoid this at all costs; it leads to argumentative dead ends and weak structure overall. "In high school, I wrote all my papers in one go, starting with the intro, constructing and polishing each sentence in order," explains Christine from Harvard. "In college I've become a huge fan of outline-based writing, which has made my essays much more tightly argued and given them better, clearer trajectories…since I can now shuffle topics around until they flow with some natural order and logic— rather than straining rhetorically to bridge from one idea to another."

The second mistake: over-outlining. Some students construct beautifully intricate outlines, replete with three or four levels of information, roman numerals, digits, letters, and tabs flying everywhere—the type of outline they taught you to make for your fifth-grade research project. Don't do this either. It constrains you. As Doris from Harvard explains: "One pitfall to avoid is getting stuck in the outline stage—I've seen students who spend far too much time embellishing their outlines when they should really have begun writing the paper itself long ago." When it comes time to write, you will be hampered if you constructed an outline that practically spells out what each sentence of each paragraph should say. These sorts of low-level decisions should be made when you write, not before. It's not until you're actually putting words on paper that you will understand the best way to make each small piece of your argument flow. Don't let an outline make these decisions for you. The happy medium between these two extremes is to construct a topic-level outline. Before we can cover the specifics of this process, I must first define what I mean by "topic." Here, I use the term to describe any self contained point that you might discuss in your paper. Typically, this is something more general than a piece of evidence but also more specific than a multipart argument. For example, here are some sample topics for our hypothetical paper about the Eiger:

- Our thesis about the Eiger and Swiss cultural identity
- Early written accounts of the Eiger

- The first ascent of the Eiger
- Contemporary press accounts of Eiger summit attempts
- Mentions of the Eiger in early-twentieth-century popular culture
- Mentions of the Eiger in early-twentieth-century Swiss tourist brochures
- MacMillan's thesis about the Alps and European identity
- The relationship between our thesis and MacMillan's argument
- Concluding thoughts about our thesis—implications and future work and future work

We start the outlining process by constructing a topic skeleton. This is a list of all the topics you will discuss in your paper, presented in the order that you plan to include them. Type this list directly into your computer because you will later need the ability to insert text in between items. Your topic skeleton succinctly describes the structure of your argument. For example, we might take the previously mentioned topics and order them as follows to form a topic skeleton for our hypothetical Eiger paper:

1. Mentions of the Eiger in early-twentieth-century Swiss tourist brochures
2. MacMillan's thesis about the Alps and European identity
3. Our thesis about the Eiger and Swiss cultural identity
4. Early written accounts of the Eiger
5. The first ascent of the Eiger
6. Contemporary press accounts of Eiger summit attempts
7. Mentions of the Eiger in early-twentieth-century popular culture
8. The relationship between our thesis and MacMillan's argument
9. Concluding thoughts about our thesis—implications and future work At this point, no specific pieces of evidence are described by our outline, but it does capture how the paper will flow. In a perfect world, you would have at least one or two good sources to support each topic.

However, it will often occur that as you formulate your topic skeleton, you come across a topic that you really need to include but for which you don't yet have any sources. That's okay. We mentioned at the end of the last step that once you start formulating your argument, you might come across some holes that need to be filled. This is exactly where these holes will become noticeable. Once you have completed your topic skeleton, you need to return to the previous step and find sources to support any of the currently unsupported topics. If you followed the research termination determination procedure from before, there shouldn't be too many of these holes.

Filling in the Details of Your Topic Outline

Once you finish your topic skeleton, and find sources for all of the unsupported topics, it's time to fill in the supporting details. This next step is crucial. As Christine from Harvard explains: "Below each bold header [in my topic skeleton], I compile in regular typeface the evidence pertaining to that header." You should actually type quotes from your research material right into the word processor document containing the outline, and label each quote with the source and page that it came from. For example, under the "first ascent of the Eiger" topic from above, you might insert quotes from a few different books on the mountain as well as excerpts from several contemporary articles. Some of these latter excerpts may also be included under the "contemporary press accounts of Eiger summit attempts" topic. It's okay to share information between topics at this point, since you will sort out which quote to use where once the writing process begins. This is not a time for caution—if it seems relevant, stick it in.

At first, this step may sound excessive. By the time you finish, your outline will be large and filled with quotes, perhaps even longer than the projected length of your completed paper. Fortunately, this process is greatly simplified by the format of your gathered research materials. Because you made a personal copy of and annotated every source, finding the appropriate pieces of evidence to include in your outline will be much easier than if you had to page through each book and article from scratch. Furthermore, the benefits of this outline far outweigh the annoyance of constructing it. As Robert, a straight-A student from Brown, explains; "I find that using this process helps me avoid digging through a pile of books and articles for each piece of information I need as I need it during writing." Remember, the goal of the straight-A approach is to separate the different components of paper construction. When it comes time to write, you don't want to be flipping through your sources, hunting down the right support. This drains your energy, increases your pain, takes time, and reduces the quality of your writing. This is why it is crucial that you extract the information from your sources in advance. Later, the writing process will be reduced to the much simpler task of simply building a framework around this already identified and organized information structure.

Step 6 Consult Your Expert Panel

"I discuss ideas with friends," says Suzanne, a straight-A student from Brown, "and am therefore usually pretty confident with my argument by the time I sit down to write." Suzanne reinforces a key observation: The more input you receive, the better your paper will turn out. And because soliciting advice is easy, you might as well get your outline reviewed by a group of people you trust. In the straight-A lexicon, this strategy is called "consulting your expert panel." The technique is popular because it requires little effort on your part, but the impact on your paper quality is significant. This is the final push that transforms your thinking from interesting into compelling and your paper from competent into a standout.

Choosing Your Expert Panel

The size of your expert panel should be directly proportional to the importance of the assignment. If it's a one-page essay worth 5 percent of your grade, then your expert panel should consist of only yourself. If it's a medium-size critical analysis essay, you might aim for two opinions. If it's a major term paper worth a significant portion of your grade, than you may want to solicit feedback from as many as half-a-dozen well-chosen people. Who should sit on your panel? Your number one pick should be your professor. Unless he specifically states that he won't discuss drafts in progress (which professors sometimes do to avoid an overload of conferencing in a large class), definitely plan to bring your outline to office hours. Lay out the general shape of your argument, and the types of sources you are drawing from and where. More often than not, the professor will have some targeted advice on how to better present your points. He might suggest a new order or an added topic that should be addressed. As David from Dartmouth notes, this meeting also "will help you to create a rapport with the prof, and give you an idea of what he or she is looking for." Yes, you've already talked with your professor in Step #3 (Seek a Second Opinion). Don't worry. There is nothing wrong with talking to a professor on two separate occasions for one paper. The first conference was quick and dealt with making sure you were starting off in the right direction. This second conference is more detailed, making sure that you managed to stay on course. Keep in mind that some students talk to their professors many times during the paper-writing process, perhaps once or twice a week. This is overkill and shouldn't be necessary if you've followed the efficient strategy laid out in this book. But rest assured that two visits are hardly monopolizing your professor's time. In addition to your professor, as David also suggests, "if you have smart friends, get their help too."

Friends from the same class are your best bet, since they will already understand the constraints of the assignment. If you aren't close with any classmates, then tap a friend with a compatible academic background. For example, if your paper is for a history class, it makes more sense to talk to a liberal arts major than an engineering major. The former will be more familiar with this style of paper. Pick a half-hour period to sit down with each friend you chose. Explain your thesis and then run through your outline, touching on your main supporting arguments. Your friends will help you identify pieces of your structure that are unclear or unnecessary. As Jason, a straight-A student from the University of Pennsylvania, explains: "If you can explain why your argument works in a rational, step-by-step manner, and you have an arsenal of sources to cite to support the argument, then you're ready to go." One final warning: Before discussing with a classmate, make sure that collaboration of this sort is allowed. It should be no problem for research papers, but for focused critical analysis essays the professor may specifically forbid that you discuss your response with other people from the class.

Step 7 Write Without the Agony

If you've followed the Straight-A strategy so far, writing should be the most straightforward part of constructing a standout paper. This step is not mysterious. At this point, you know what to say and in what order, so all you have to do is clearly communicate your already well developed argument. "Once I have the outline, my brain relaxes," explains Jeremy, a straight-A student from Dartmouth. "I don't need to think anymore about structuring the paper, but rather just think about how to best articulate my thoughts." Note, however, that this book is not about the mechanics of writing. This is a skill that you will need to develop on your own. In general, the more you write outside of class, the better; so, to improve your skills, try to write as much as you can. Also, don't be afraid to plunk a Chicago Manual of Style above your desk or flip through well-known style guides like William Zinsser's On Writing Well. These can help you focus and polish your writing, and professors appreciate clear exposition. This being said, there is not much left to cover. You know what you have to do: Put words on paper. It's not easy, but, if you followed the previous steps, it won't be nearly as agonizing as most students make it. I leave you with only three succinct pieces of logistical advice to help guide you through the process of combining your writing skills with your straight-A preparation to produce the best possible paper:

Separate Your Writing from the Steps That Come Before and After

As Greta, a straight-A student from Dartmouth, explains, when it comes to the writing process she "would map out a schedule, for example, write two pages a day for five days, and then edit one day." Ryan, another Dartmouth student, admits that he "usually gave about two days for the actual writing, but the research part of the paper usually happened a few weeks before." Both of these students' habits are instructed by a simple rule:

Separate your research from your writing and your writing from your editing.

Of course, this is not always practical for a small critical analysis essay, but it's crucial for a more substantial research paper. A fresh mind produces better results. It's hard to write well when you've spent an exhausting morning researching in the library. It's equally as hard to edit carefully when you have already spent hours that day writing the words you are about to review. "Having time away from the paper," explains Jeremy from Dartmouth, "allows you to come at it with better concentration."

Write in Quiet Isolation

Writing requires substantial concentration. If you work in an area with a lot of ambient noise, you will become distracted and your efficiency will decrease dramatically. Therefore, if you have a laptop, retreat to a distant, silent corner of a faraway building to work on your writing. “I am most productive,” explains Suzanne from Brown, “in a place where I have total silence and no external stimulation—for example, the library stacks.” As I emphasized in Part One of this book, avoid, if possible, study lounges, crowded areas of the library, and public computer labs. These places are noisy, and, as Rielle from Brown warns: “You’re always running into people and getting snagged by fascinating conversations.” If you don’t have a laptop, then work at the computer in your room at times when your roommates are in class or at meetings. If necessary, arrange in advance to kick them out for a few hours so you can work in peace. In addition, you should schedule your writing to correspond to your energetic high points during the day. For me, this meant working right after breakfast with my first cup of coffee. For others, this might be the early evening, right before dinner, or the afternoon after a post-lunch workout. The key is to recognize that writing is perhaps the most demanding (in terms of focus required) intellectual activity you will do while a college student. More so than reading, solving problem sets, or studying, writing demands all the energy and focus that you can manage.

Follow Your Outline and Move Slowly

Chris from Dartmouth offers simple advice for tackling the writing process: “I use the outline I’ve created as a guide and just sort of build from that, taking it one paragraph at a time.” Follow this example. Use your outline to direct your writing, setting up and expounding on each of the topics in a clear, cogent way, and copying and pasting quotes directly into your paper wherever needed. Keep your attention focused on the topic at hand. Your mind is free from concerns of structure and sources at this point, so you can concentrate on articulating specific points clearly and strongly. Always make sure your current point reads clearly before moving on to the next. Some students have success by writing their first draft quickly and sloppily, and then returning to clean it up in many successive editing rounds. In your case, however, because you’re working from a detailed topic outline, it will end up being quicker to write carefully the first time. Moving fast tends to produce time-consuming dead ends later on, and ultimately necessitates major rewrites. And, believe it or not, that’s all you need to know. So stop fearing writing! If you follow this system, this step, though still challenging, won’t take an excessive amount of time. Leave

the all-nighters to the average students, get your first draft done quickly and effectively, and then go have some fun.

Step 8 Fix, Don't Fixate

Editing your paper is important, and this shouldn't come as a surprise. If you hand in pages containing spelling and grammatical mistakes, the professor will be more than disappointed—she's likely to lower your grade as a result. Even if your argument is brilliant, it's really hard to get past those simple errors. This last step of the paperwriting process aims to free your work of these imperfections. At the same time, however, you don't want to overedit. Many students fixate on these fixes, and end up devoting hours to reviewing draft after draft. This act of academic self-flagellation is especially prevalent when working on big research papers. After all the work you dedicate to crafting a masterpiece of an argument, you begin to fear letting your baby out into the world. It's sort of like suffering from a nerdy version of Stockholm Syndrome— and it's a drag. "You can edit a paper forever and still not be satisfied," explains Frank from Brown. "So it's important to know when to just print the damn thing out and send it off to its fate." The goal here is to devise a simple system, something you can follow for every paper to help you root out the embarrassing typos and confusing constructions but also to prevent you from becoming a grammar psycho. Drawing from the advice given in my straight-A interviews, I present in this step a system that meets these criteria. It involves three simple passes through your draft. No more and no less. For those of you who are used to endless editing runs, the idea that three passes is enough might sound suspiciously quick. Or, if you're the kind of person whose idea of proofreading ismhitting the spell-check button, multiple runs might seem hopelessly time consuming. But rest assured, the system is efficient and it gets the job done. As we will soon discuss, the key is the specific kind of attention given to each pass. Here is how it works:

The Argument Adjustment Pass

Your first pass through your work should be conducted on your computer. Read carefully, and focus on the on your computer. Read carefully, and focus on the presentation of your arguments—don't worry about small grammatical mistakes for the moment. Take in the paper one paragraph at a time. If a section is awkwardly stated, clarify the sentences. If it makes a point you already explained earlier, ruthlessly cut it out. If the argument is lacking detail, add in more sentences as necessary to fully explain your point. If a transition is lacking between topics or paragraphs, add one. Also be on the lookout for any major structural issues. Sometimes you don't realize until you finish an entire draft that your topic outline wasn't optimal. Don't be afraid to shift around major chunks of text. This is your

chance to make serious edits to the structure of your paper, so take this seriously. Do this editing at a time when you are rested and unhurried by upcoming appointments. For a large paper, spread this pass out over several days if possible. When you're done, your paper may still contain small mistakes. That's okay. You'll fix those next. The goal here is to tweak the argument until you're satisfied that it makes every point that you want to make in the order that you want to make them. Once you're done with this pass, these big picture details are locked in.

The Out Loud Pass

The Argument Adjustment pass is important, but not sufficient by itself. As Robert from Brown explains: "My papers always read differently on the page than on the screen." And as Melanie, a straight-A Dartmouth student, adds: "having a hard copy to read and mark up was absolutely necessary." Accordingly, for this next pass, you should first print out a copy of your paper, and then take it where you can have some privacy. With a pencil in hand, and this is the important part, begin to read your paper out loud. Don't cheat. Use a strong voice and articulate each word as if you're delivering a speech. For a long paper, it may take a long time to read the entire thing, so be prepared to split this into several sessions. You might also want water or hot tea on hand to prevent you from losing your voice. Whatever you do, however, don't avoid actually articulating every word. Whereas the last pass focused on your arguments, the goal of this pass is to root out small mistakes that might otherwise distract a reader from your engaging thesis. While reading, whenever you come across a grammatical mistake or an awkward construction, mark it clearly on the printout. Then go back up to the beginning of the preceding paragraph and start reading again. After you have marked up the entire document, go back to your computer and enter the changes you noted on your printout. A word of warning—this process always takes longer than expected, so leave yourself plenty of time. The rationale behind this approach is simple. As Ryan from Dartmouth explains: "Reading it out loud helps you catch typos or strange wording better than reading it in your head." No matter how many times you review a draft, if you're scanning silently, there are certain awkward phrases you might skip over every time—our subconscious minds have a habit of patching over these mistakes when reading our own writing. When you say the words out loud, on the other hand, your ear will catch even minor problems and draw your attention to them. "Something that looks fine on paper will jump out as strange or poorly worded when you hear it," explains Jeremy from Dartmouth. Therefore, by reading the paper out loud, you

will catch most mistakes in your paper in just one pass—requiring much less time than the multiple silent reviews necessary to achieve similar results.

The Sanity Pass

Because the previous passes were so careful, you're almost done, and you've only read through your work twice so far! Just to be sure that something embarrassing didn't slip through, it's a good idea to make a final, quick pass through a printed copy of your paper before handing it in. You don't have to do this pass out loud, and feel free to move through it quickly. But definitely use a printed copy, rather than reading on your computer screen, since a hard copy has a better chance of revealing a typo. If possible, separate this pass from the previous two. In fact, it's fine to do this the morning of the deadline. At this point, there should be no major mistakes lurking in your document. The goal here is twofold.

First, as mentioned, this last pass catches stray mistakes.

"I tried to always reread my papers before handing them in," explains James, a straight-A student from Dartmouth. "I try to smooth out any last kinks in the flow during that final editing."

Second, and perhaps more important, it also provides closure on your paper.

Because your work is so polished by this point, this final read-through should essentially go smoothly. As a result, you will develop a better feel for the flow and enjoy the experience of watching your argument unfold. This should help put your mind at ease. After all your work, think of this last pass as your reward. A final review before the paper leaves your hands, probably never to be read by you again. That's why we call it a sanity pass. Once you hand in your paper, you can now confidently tell yourself: "Unless I'm going insane here, I'm pretty sure that I just handed in a damn good piece of writing!"

Part Three Cheat Sheet

Step #1. Target a Titillating Topic

- Start looking for an interesting topic early.

Step #2. Conduct a Thesis-Hunting Expedition

- Start with general sources and then follow references to find the more targeted sources where good thesis ideas often hide.

Step #3. Seek a Second Opinion

- A thesis is not a thesis until a professor has approved it.

Step #4. Research like a Machine

- Find sources.
- Make personal copies of all sources.
- Annotate the material.
- Decide if you're done. (If the answer is "no," loop back to #1.)

Step #5. Craft a Powerful Story

- There is no shortcut to developing a well-balanced and easy-to-follow argument.
- Dedicate a good deal of thought over time to getting it right.
- Describe your argument in a topic-level outline.
- Type supporting quotes from sources directly into your outline.

Step #6. Consult Your Expert Panel

- Before starting to write, get some opinions on the organization of your argument and your support from classmates and friends who are familiar with the general area of study.
- The more important the paper, the more people who should review it.

Step #7. Write Without the Agony

- Follow your outline and articulate your points clearly.
- Write no more than three to five pages per weekday and five to eight pages per weekend day.

Step #8. Fix, Don’t Fixate

- Solid editing requires only three careful passes:
  - The Argument Adjustment Pass: Read the paper carefully on your computer to make sure your argument is clear, fix obvious errors, and rewrite where the flow needs improvement.
  - The Out Loud Pass: Carefully read out loud a printed copy of your paper, marking any awkward passages or unclear explanations.
  - The Sanity Pass: A final pass over a printed version of the paper to check the overall flow and to root out any remaining errors.

Step 109-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 110-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman.**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 16: Deep Work, Strategy and Tactics.

Step 111-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 112-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 113-You ARE Required To Do The Work For Strategy and Tactics.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 114-Use Rules of Reading for Strategy and Tactics

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Strategy and Tactics.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books To Strategy and Tactics

Step 115-Strategy, Stratagem and Tactic Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 14, before looking into Strategy and Tactics.**
2. **Listen, Follow and Apply the following Books.**
    A. Competitive Strategy.
    B. Games, Strategies, and Decision Making.
    C. Good Strategy_Bad Strategy.
    D. Strategic Management_ Theory & Cases_ An Integrated Approach.
    E. The 33 Strategies of War.
    F. The Art of Strategy_ A Game Theorist's Guide to Success in Business and Life.
    G. Your Strategy Needs a Strategy_ How to Choose and Execute the Right Approach.
    H. 36 Strategem.
    I. Extreme Ownership.
    J. Competitive Advantage of Nations.
    K. Competitive advantage_ creating and sustaining superior performance _ with a new introduction.
    L. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    M. Secrecy & Stratagem_ Understanding Chinese Strategic Culture.
    N. Stratagem_ Deception and Surprise in War (Artech House Information Warfare Library).
    O. Stratagems And Spoils_ A Social Anthropology Of Politics.
    P. Strategem.
    Q. Strategic Management.
    R. Strategic Management.
    S. Strategic Management and Business Policy.
    T. Strategic Management Theory An Integrated Approach.
    U. Strategy - Strategic Planning For Project Management.
    V. Sun Tzu and the Art of Business_ Six Strategic Principles for Managers.

W. The 33 Strategies of War.
X. The 36 Stratagems for Business_ Achieve Your Objectives Through Hidden and Unconventional Strategies and Tactics.
Y. The 36 Strategies of the Chinese Can It Be a Eurasian Strategic Model in a Global Context?
Z. The 36 strategies of the martial arts _ the classic Chinese guide for success in war, business, and life.
AA. The Art of War for Small Business_ Defeat the Competition and Dominate the Market with the Masterful Strategies of Sun Tzu.
BB. The Art of War_ Complete Text and Commentaries.
CC. The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.
DD. The Complete Art of War.
EE. Treasons, Stratagems, And Spoils_ How Leaders Make Practical Use Of Beliefs And Values.

Step 116 - A Primer on Strategy

There are many good reasons to read Good Strategy Bad Strategy by Richard Rumelt.
You may be frustrated by the state of your organization's strategy. You may be interested in identifying the characteristics of good strategy. Or you may want to learn how to identify the elements of a bad strategy.

A leader's most important responsibility is identifying the biggest challenges to forward progress and devising a coherent approach to overcoming them. In contexts ranging from corporate direction to national security, strategy matters. Yet we have become so accustomed to strategy as exhortation that we hardly blink an eye when a leader spouts slogans and announces high-sounding goals, calling the mixture a "strategy."

Complexity

"A hallmark of mediocrity and bad strategy," Rumelt writes, "is unnecessary complexity—a flurry of fluff masking an absence of substance." Most bad strategies are nothing more than statements of desire. And if you read them closely, the goals often contradict one another. This book should be required reading for managers and executives alike.

The Strategy Retreat

I'm sure this excerpt sounds familiar to many of you:

The event was a "strategy retreat." The CEO had modeled it on a similar event at British Airways he had attended several years before. About two hundred upper-level managers from around the world gathered in a hotel ballroom where top management presented a vision for the future: to be the most respected and successful company in their field. There was a specially produced motion picture featuring the firm's products and services being used in colorful settings around the world. There was an address by the CEO accompanied by dramatic music to highlight the company's "strategic" goals: global leadership, growth, and high shareholder return. There were breakouts into smaller groups to allow discussion and buy-in. There was a colorful release of balloons. There was everything but strategy.

Good strategy is the exception not the rule. Rumelt argues that the bad strategy problem is only growing. Even worse, more and more leaders think they have a strategy when they do not—they have a bad strategy. Bad strategy, "ignores the power of choice and focus,

trying instead to accommodate a multitude of conflicting demands and interests.” Sounds familiar?

What is a bad strategy?

Bad strategy is long on goals and short on policy or action. It assumes that goals are all you need. It puts forward strategic objectives that are incoherent and, sometimes, totally impracticable. It uses high-sounding words and phrases to hide these failings.

Underperformance

When a leader characterizes the challenge as underperformance, it sets the stage for bad strategy. Underperformance is a result. The true challenges are the reasons for the underperformance.

Good Strategy

Good strategy is not just “what” you are trying to do. It is also “why” and “how” you are doing it. … Good strategy requires leaders who are willing and able to say no to a wide variety of actions and interests. Strategy is at least as much about what an organization does not do as it is about what it does.

Strategy is not vision or ambition

Despite the roar of voices wanting to equate strategy with ambition, leadership, “vision,” planning, or the economic logic of competition, strategy is none of these. The core of strategy work is always the same: discovering the critical factors in a situation and designing a way of coordinating and focusing actions to deal with those factors. A leader’s most important responsibility is identifying the biggest challenges to forward progress and devising a coherent approach to overcoming them. In contexts ranging from corporate direction to national security, strategy matters.

The Three Elements of Strategy

The kernel of a strategy contains three elements: a diagnosis, a guiding policy, and coherent action. The guiding policy specifies the approach to dealing with the obstacles called out in the diagnosis. It is like a signpost, marking the direction forward but not defining the details of the trip. Coherent actions are feasible coordinated policies, resource commitments, and actions designed to carry out the guiding policy.

Coherence of design

A good strategy doesn’t just draw on existing strength; it creates strength through the coherence of its design. Most organizations of any size don’t do this. Rather, they pursue

multiple objectives that are unconnected with one another or, worse, that conflict with one another.

Coordination is costly and hard

Coordination is costly, because it fights against the gains to specialization, the most basic economies in organized activity. To specialize in something is, roughly speaking, to be left alone to do just that thing and not be bothered with other tasks, interruptions, and other agents' agendas. As is clear to anyone who has belonged to a coordinating committee, coordination interrupts and de-specializes people.

Good strategy is surprising

Most complex organizations spread rather than concentrate resources, acting to placate and pay off internal and external interests. Thus, we are surprised when a complex organization, such as Apple or the U.S. Army, actually focuses its actions. Not because of secrecy, but because good strategy itself is unexpected.

Focus, however, is hard. It means saying no to individuals, groups, and even entire lines of business.

The inside view describes the fact that people tend to see themselves, their group, their project, their company, or their nation as special and different.

Increasing value …

In particular, increasing value requires a strategy for progress on at least one of four different fronts: deepening advantages, broadening the extent of advantages, creating higher demand for advantaged products or services, or strengthening the isolating mechanisms that block easy replication and imitation by competitors.

Unfinished Thought

As I was reading this book I kept wondering why organizations were so reluctant to employ a strategy. All of this thinking reminded me of another book I had read a few years back on strategy called The Strategy Paradox.

What is the paradox?

The most profitable strategies are "extreme" strategies that commit companies to positions of either product differentiation or cost leadership. These extreme positions expose firms to a greater likelihood of bankruptcy by increasing the strategic risk they face. Consequently, the strategies likeliest to succeed are also likeliest to fail. That is the strategy paradox.

At first I thought that maybe organizations avoided good strategy simply because it was complicated and involved hard choices. The more I thought about it, however, the more I settled on the fact that people avoid good strategies because they don't want to be wrong.

When Steve Jobs took over Apple, he did the unexpected.

What he did was both obvious and, at the same time, unexpected. He shrunk Apple to a scale and scope suitable to the reality of its being a niche producer in the highly competitive personal computer business. He cut Apple back to a core that could survive.

Steve Jobs talked Microsoft into investing $150 million in Apple, exploiting Bill Gates's concerns about what a failed Apple would mean to Microsoft's struggle with the Department of Justice. Jobs cut all of the desktop models—there were fifteen—back to one. He cut all portable and handheld models back to one laptop. He completely cut out all the printers and other peripherals. He cut development engineers. He cut software development. He cut distributors and cut out five of the company's six national retailers. He cut out virtually all manufacturing, moving it offshore to Taiwan. With a simpler product line manufactured in Asia, he cut inventory by more than 80 percent. A new Web store sold Apple's products directly to consumers, cutting out distributors and dealers.

What is remarkable about Jobs's turnaround strategy for Apple was how much it was "Business 101" and yet how much of it was unanticipated.

In May 1998, shortly after taking over Apple, Jobs explained the substance and coherence of his actions:

The product lineup was too complicated and the company was bleeding cash. A friend of the family asked me which Apple computer she should buy. She couldn't figure out the differences among them and I couldn't give her clear guidance, either. I was appalled that there was no Apple consumer computer priced under $2,000. We are replacing all of those desktop computers with one, the Power Mac G3. We are dropping five of six national retailers—meeting their demand has meant too many models at too many price points and too much markup.

Jobs's actions were both focused and decisive and, in hindsight, correct. Everyone at the time was surprised because they expected the fluffy goals and vacuous promises typical of

most executives. But Jobs's back-to-business 101 approach was correct. Jobs had a sick business and he needed to fix it.

While Jobs's turnaround at Apple was impressive it wouldn't enable Apple to become more than a niche player in an industry dominated by network effects. In 1998 Rumelt had a chance to ask Jobs "What is the strategy?" Jobs responded simply "I am going to wait for the next big thing." This encounter struck Rumelt as different. Everywhere he went and everyone he talked to just spewed the same clichés about their strategy — network relationships, adopt best practices, etc.

Rumelt writes:

Jobs did not enunciate some simple-minded growth or market share goal. He did not pretend that pushing on various levers would somehow magically restore Apple to market leadership in personal computers. Instead, he was actually focused on the sources of and barriers to success in his industry—recognizing the next window of opportunity, the next set of forces he could harness to his advantage, and then having the quickness and cleverness to pounce on it quickly like a perfect predator. There was no pretense that such windows opened every year or that one could force them open with incentives or management tricks. He knew how it worked. He had done it before with the Apple II and the Macintosh and then with Pixar. He had tried to force it with NeXT, and that had not gone well. It would be two years before he would make that leap again with the iPod and then online music. And, after that, with the iPhone.

Steve Jobs's answer that day—"to wait for the next big thing"—is not a general formula for success. But it was a wise approach to Apple's situation at that moment, in that industry, with so many new technologies seemingly just around the corner.

In hindsight we know Jobs's strategy worked but it could have just as easily backfired. The turnaround might have failed and landed Apple, now the world's largest company, in bankruptcy. Apple's strategy at the time wasn't easy to like — in fact, many people thought he was wrong. I imagine that Jobs would have been ok with being wrong — he was more worried about being mediocre.

We equate strategy with success but they are different things.

Real strategies—*good strategies*—can be wrong. And we don't want to be wrong. We're playing not to lose rather than playing to win. We all know how it feels to make a mistake — we'd rather watch other people make mistakes than make them ourselves. So we seek consensus because it's safe.

Yet consensus, when you think about it, is almost assured to fail. It's making everyone happy and alienating no one.

Consensus is the opposite of marshalling your resources towards a coordinated approach. And consensus, by definition, almost certainly assures a bad strategy because it doesn't make any choices. It's a sprinkle of this and a dash of that — it's something for everyone. Rather than risk being wrong, we hide behind puff that makes everyone happy. That's bad strategy.

The beauty of Good Strategy Bad Strategy is that it calls out the vast majority of public and private organizations that have horrible strategies. The bad news is that things are unlikely to change. After all, no one ever got fired for having a strategy to "increase the percentage of high school graduates." It's hard to argue with that as a goal but let's stop calling it a strategy.

There are plenty of good strategies out there. Lou Gestner developed one when he took over IBM in 1993 (for details see Gestner's book — Who Says Elephants Can't Dance?: Leading a Great Enterprise through Dramatic Change). He understood the problem and devised an approach that marshalled the organization towards dealing with the problem.

Step 117-Strategy vs. Tactics: Why the Difference Matters

In order to do anything meaningful, you have to know where you are going.

Strategy and tactics are two terms that get thrown around a lot, and are often used interchangeably in numerous contexts. But what exactly do they mean, what is the difference, and why is it important? In this article, we will look at the contrast between strategy and tactics, and the most effective ways to use each.

While strategy and tactics originated as military terminology, their use has spread to planning in many areas of life. Strategy is overarching plan or set of goals. Changing strategies is like trying to turn around an aircraft carrier—it can be done but not quickly. Tactics are the specific actions or steps you undertake to accomplish your strategy. For example, in a war, a nation's strategy might be to win the hearts and minds of the opponent's civilian population. To achieve this they could use tactics such as radio broadcasts or building hospitals. A personal strategy might be to get into a particular career, whereas your tactics might include choosing your educational path, seeking out a helpful mentor, or distinguishing yourself from the competition.

We might have strategies for anything from gaining political power or getting promoted, to building relationships and growing the audience of a blog. Whatever we are trying to do, we would do well to understand how strategy and tactics work, the distinction, and how we can fit the two together. Without a strategy we run the risk of ambling through life, uncertain and confused about if we are making progress towards what we want. Without tactics, we are destined for a lifetime of wishful thinking or chronic dissatisfaction. As Lawrence Freedman writes in *Strategy: A History*, "Without a strategy, facing up to any problem or striving for any objective would be considered negligent. Certainly, no military campaign, company investment, or government initiative is likely to receive backing unless there is a strategy to evaluate…. There is a call for strategy every time the path to a given destination is not straightforward." And without tactics you become dependent on pure luck to implement your strategy.

To achieve anything we need a view of both the micro and the macro, the forest and the trees—and how both perspectives slot together. Strategy and tactics are complementary. Neither works well without the other. Sun Tzu recognized this two and a half millennia ago

when he stated, “Strategy without tactics is the slowest route to victory. Tactics without strategy are the noise before defeat.” We need to take a long-term view and think ahead, while choosing short-term steps to take now for the sake of what we want later.

The Relationship Between Strategy and Tactics

Any time we decide on a goal and invest resources in achieving it, we are strategizing. Freedman writes:

One common contemporary definition describes it as being about maintaining a balance between ends, ways, and means; about identifying objectives; and about the resources and methods available for meeting such objectives. This balance requires not only finding out how to achieve desired ends but also adjusting ends so that realistic ways can be found to meet them by available means.

In *The Grand Strategy of the Roman Empire*, Edward N. Luttwak writes that strategy “is not about moving armies over geography, as in board games. It encompasses the entire struggle of adversarial forces, which need not have a spatial dimension at all….” When you think about winning a war, what does it mean to actually win? History is full of examples of wars that were “won” on paper, only to be restarted as soon as the adversary had time to regroup. So being precise in your goal, to encompass the entirety of what you want to achieve, is necessary to articulate a good strategy. It’s not about success in the moment, but success in the long term. It’s the difference between the end of WWI and WWII. World War I was about winning that war. World War II was about never fighting a war like that again. The strategies articulated and pursued by the Treaty of Versailles and the Marshall Plan were full of markedly different tactics.

In *Good Strategy, Bad Strategy*, Richard Rumelt writes: “The most basic idea of strategy is the application of strength against weakness. Or if you prefer, strength applied to the most promising opportunity…A good strategy doesn’t just draw on existing strength; it creates strength.” Rumelt’s definition of strategy as creating strength is particularly important. You don’t deplete yourself as you execute your strategy. You choose tactics that reinforce and build strength as they are deployed. Back to winning hearts and minds – the tactics require up-front costs. But as they proceed, and as the strategy unfolds, strength and further support are gained by having the support of the local population. A good strategy makes you stronger.

“Grand strategy is the art of looking beyond the present battle and calculating ahead. Focus on your ultimate goal and plot to reach it.”

— Robert Greene, The 33 Strategies of War

The Components of Strategy

The strategic theorist Henry Mintzberg provides a useful approach to thinking about strategy in adversarial situations. According to Mintzberg, there are five key components or types:

1. Plan: A consciously chosen series of actions to achieve a goal, made in advance.
2. Ploy: A deliberate attempt to confuse, mislead or distract an opponent.
3. Pattern: A consistent, repeated series of actions that achieve the desired result.
4. Position: A considered relationship between an entity (organization, army, individual etc) and its context.
5. Perspective: A particular way of viewing the world, a mindset regarding actions that lead to a distinct way of behaving.

Geoffrey P. Chamberlain offers a slightly different perspective on the components of strategy, useful when the strategy is more about a personal goal. He identifies seven parts:

1. A strategy is used within a particular domain.
2. A strategy has a single, well defined focus.
3. A strategy lays out a path to be followed.
4. A strategy is made up of parts (tactics).
5. Each of a strategy's parts pushes towards the defined focus.
6. A strategy recognises its sphere of influence.
7. A strategy is either intentionally formed or emerges naturally.

According to Rumelt, a strategy must include "premeditation, the anticipation of others' behavior, and the purposeful design of coordinated actions. As a general rule, strategy is more important in situations where other parties have the potential to thwart or disrupt actions, or where our plans are at risk if we don't take meaningful steps to achieve them. Good strategy requires us to both focus on a goal, and anticipate obstacles to reaching that goal. When we encounter obstacles, we may need to employ what Freedman calls "deceits, ruses, feints, manoeuvres and a quicker wit"—our tactics.

"The skillful tactician may be likened to the Shuai-Jan. Now the Shuai-Jan is a snake that is found in the Ch'ang mountains. Strike at its head, and you will be attacked by its tail; strike at its tail, and you will be attacked by its head; strike at its middle, and you will be attacked by head and tail both."

— Sun Tzu, The Art of War

A Few Words on Tactics

Even the most elegant, well-planned strategy is useless if we do not take thoughtful steps to achieve it. While the overall goal remains stable, the steps we take to achieve it must be flexible enough to adjust to the short-term realities of our situation.

The word “tactic” comes from the Ancient Greek “taktikos,” which loosely translates to “the art of ordering or arranging.” We now use the term to denote actions toward a goal. Tactics often center around the efficient use of available resources, whether money, people, time, ammunition, or materials. Tactics also tend to be shorter-term and more specific than strategies.

Many tactics are timeless and have been used for centuries or even millennia. Military tactics such as ambushes, using prevailing weather, and divide-and-conquer have been around as long as people have fought each other. The same applies to tactics used by politicians and protesters. Successful tactics often include an ‘implementation intention’—a specific trigger that signals when they should be used. Simply deciding what to do is rarely enough. We need an “if this, then that” plan for where, when and why. The short-term nature and flexibility of tactics allow us to pivot as needed, choosing the right ones for the situation, to achieve our larger, strategic goals.

If you don’t have a strategy, you are part of someone else’s strategy.”

— Alvin Toffler

Conclusion

Although often regarded as interchangeable, strategy and tactics are somewhat different, though complementary concepts. According to the skilled strategist Sun Tzu, strategy is about winning before the battle begins, while tactics are about striking at weakness. Both are ancient concepts that have come to be an essential part of numerous disciplines and offer endless new ways of thinking.

Step 118 Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 119- Tiny Gains. Massive Results.

When we want to improve ourselves, we often pursue dramatic changes with little success. A better idea is to go for small, incremental improvements that add up over time.

Self-motivated, self-starting individuals are incredibly motivated to find their weaknesses. It's not far-fetched to say that some of us actually seek to make ourselves perfect — rational, calculating beings making the right type of decisions at just the right times. But we've learned from Star Trek; we don't look to eliminate emotion either and turn ourselves into Mr. Spock. We want *just the right amount* of emotion in our lives.

People often overestimate what they can accomplish in one year. But they greatly underestimate what they could accomplish in five years.

— Peter drucker

If we're night owls, we seek to become early risers. (Ben Franklin did it!). If we're procrastinators, we look to become doers. If we're always late to meetings, we look to be early to meetings. We want to eliminate our weaknesses and become a little More.

This is, of course, a laudable goal. But the self-starters among us have probably all run into the same problem: We don't actually follow through on the things we know will make us better. We don't eat the broccoli. We get a little too robotic. We get up at 8:30 when we said we'd do 5:30 from here on out. We leave that essay until the last second even though that was never going to happen again. We're five minutes late. We don't become lore at all, and the failure to get there makes us feel like less.

The culprit is the thought that any important change happens quickly. It doesn't matter whether you're trying to get up early or pick up and implement the *Psychology of Human Misjudgment*. Anything important happens slowly.

From Potential to Useful

And why should it be otherwise? If you were to truly understand, in-depth, and apply the *Psychology of Human Misjudgment* to your dealings, you'd be *way* far out ahead of your peers and your former self. The advantage of understanding human nature is incredible. But it takes deep, repeated study and a long gestation period to get there. It takes applying the ideas to the world, feeling them out, forgetting them, re-doubling yourself, and trying again. Not giving up when you forget or fail. It is through the process of *refinement* that one learns new habits and ideas.

The visual mental model I like for self-improvement is imagining something like a Lathe.

A *lathe*, for the non-engineer, is a tool that molds a piece of material into some shapely form. A machinist would use a lathe to take a hunk of metal and turn it into a usable engine part, for example. The lathe takes something with *potential* and shapes it into something *useful* by slowly refining it and shaving away the excess.

Compounding works in other areas besides money.

The way I think about it, if I can get 5% wiser and better every year, then I will be about twice as wise as I am now in less than 15 years. (Go ahead, grab your calculators.) In less than 30 years, my return will be 4x. This is how the non-gifted among us can surpass otherwise more intelligent people.

Tiny Improvements, Massive Results

Tiny improvements add up to *massive* differences.

Compounding works in other areas besides money. And we want to compound worldly wisdom. These little mental tricks like the Lathe and the idea of 5% yearly improvement are just ways to remind myself that I'm not going to wake up wiser/nicer/healthier/smarter tomorrow morning or the morning after. And just as importantly, if I backslide on a goal I've set or I forget something I thought I'd learned well, that it's really not the end of the world. I don't need to give up and call it hopeless. All I have to do is figure out where I slipped, re-double my efforts, and go after it again. All I need is 5% a year to become 4x better in my adult lifetime. The truth is that whatever bad habits you have or whatever things you're struggling to learn, there's probably a good reason. Your biology and your experiences to date have set you in stone to a certain extent, and the older you are, the more likely that is to be true. The chains of habit are too light to be felt until they are too heavy to be broken. Billion-dollar industries have been built on convincing you that it's *easy* to make big changes or to get a lot wiser and better. But it honestly isn't. It's hard work.

Yet any study of great individuals reveals that the work is worth doing.

So just imagine if you could make slightly <u>better decisions</u> every year. Whether it's 5% better consideration of *all* of your decisions, or making 5% of your decisions differently, or some permutation thereof, it doesn't really matter. Every year you'll look back at some part of your old self and wonder how you could've been so dumb. And one day, in less than 30 years, you'll look back and see your old self as almost unrecognizably stupid.

What more could you ask for?

Step 120-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.
IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.
V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.
VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.
VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.
VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 17: Deep Work and Leadership and Accountability

Step 121-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 122 - NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 123-You Have Required To Do The Work For Leadership.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 124-Use Rules of Reading for Leadership And Accountability

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Leadership And Accountability.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**

VIII. **Method 8-Book Survey Method. Pages 194-204.**
IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books To Leadership

Step 125-Leadership and Accountability Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 15, before looking into Leadership and Accountability.**
2. **Listen, Follow and Apply the following Books.**
    A. **How To Read A Book By Mortimer Adler**
    B. **Socratic Logic, Method and Questioning.**
    C. **Start with Why_ How Great Leaders Inspire Everyone to Take Action.**
    D. The Dichotomy of Leadership_ Balancing the Challenges of Extreme Ownership to Lead and Win.
    E. The seven habits of highly effective people _ restoring the character ethic.
    F. The-Art-of-Leadership.
    G. Tools of Titans_ The Tactics, Routines, and Habits of Billionaires, Icons, and World-Class Performers.
    H. Why Great Leaders Don't Take Yes for an Answer Managing.
    I. Best Practices in Leadership Development and Organization Change_ How the Best Companies Ensure Meaningful Change and Sustainable.
    J. Coaching for Leadership_ The Practice of Leadership Coaching from the World's Greatest Coaches.
    K. Develop Your Leadership Skills_ Develop Yourself as a Leader - Lead at a Strategic Level - Grow Leaders in Your Organisation.
    L. Educational Leadership_ Personal Growth for Professional Development.
    M. Focus on Leadership_ Servant-Leadership for the 21st Century.
    N. Good Leaders Ask Great Questions_ Your Foundation for Successful Leadership.
    O. Strategic Leadership
    P. The Leadership Challenge_ Activities Book (J-B Leadership Challenge.
    Q. The Maxwell Leadership Bible.
    R. The Only Leadership Book You'll Ever Need_ How to Build Organizations Where Employees Love to Come to Work.
    S. The Bible on Leadership.

3. **Listen, Follow and Apply the following Books.**
    A. **How To Read A Book By Mortimer Adler**
    B. **Socratic Logic, Method and Questioning.**
    C. **12 Accountability Commitments.**
    D. **OZ Principle: Getting Results Through Individual and Organizational Accountability.**
    E. **Accountability in the WorkPlace.**
    F. **The Dichotomy of Leadership_ Balancing the Challenges of Extreme Ownership to Lead and Win.**
    G. **Summary of QBQ The Question Behind Question**
    H. **NDSU QBQ.**

Step 126-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 127-Leaders and Followers, Planners and Doers

The author Marshall Goldsmith has a gift for taking classic theories and adding to them, or slightly modifying them, to construct something new and interesting.

A good example of this is what he does with Situational Leadership in the book Triggers: Creating Behavior That Lasts – Becoming the Person You Want to Be.

He takes the original ideas postulated by Paul Hersey and Ken Blanchard in their theory of Situational Leadership and adds an interesting spin, allowing us to use some of the insights more personally.

Situational leadership is the idea that one needs to constantly adapt their leadership style to the ever changing environment in which they operate.

If a specific style works in one situation with one particular individual, that doesn't mean we should adopt that style for all people and situations. However, in part because success is reinforced, that is generally what we do.

Hersey and Blanchard's premise is that leaders need to adapt their style to fit the performance readiness of their followers. Readiness not only varies by person, it also varies by task. Followers have different levels of motivation and ability for different tasks.

Leaders need to acknowledge that situations change along with the readiness of their staff. To be most effective, different people require different types of leadership.

Hersey and Blanchard outlined four distinct styles:

1. *Directing is for employees requiring a lot of specific guidance to complete the task. The leader might say, 'Chris, here's what I'd like you to do, step by step. And here's when I need it done.' It's primarily a one-way conversation, with little input from the employee.*
2. *Coaching is for employees who need more than average guidance to complete the task, but with above-average amounts of two-way dialogue. Coaching is for people who both want and need to learn. The leader might say, 'Chris, here's what I'd like you to do,' and then ask for input: 'What do you think, Chris?'*
3. *Supporting is for employees with the skills to complete the task but who may lack the confidence to do it on their own. This style features below-average amounts of*

direction. The leader might say, 'Chris, here's the task, How do you think is should be done? Let's talk about it. How can I help you on this one?'

4. *Delegating is for employees who score high on motivation, ability, and confidence. They know what to do, how to do it, and can do it on their own. The leader might say, 'Chris, here's the assignment. You have a great track record. If I can help, just ask. If not, you're on your own.'*

The four styles are quite different. The idea is to try and measure the need of your employee and choose the style that best fits them at that particular moment in time. The measuring process needs to happen continually for you to be most effective. The style which best helps Chris in situation X might not be the the one that will help him in situation Y.

Now for the twist.

Hersey and Blanchard's situational leadership is a perfect analogue to a hidden dynamic that exists within us when we attempt to change our behavior. It's the same dynamic whether you call it leader and follower, planner and doer, or manager and employee. The terms are interchangeable as far as I'm concerned.

As we go through life making plans to be a better friend, partner, worker, athlete, parent, son, or daughter, inside each of us are two separate personas. There's the leader/planner/manager who plans to change his or her ways. And there's the follower/doer/employee who must execute the plan.

Goldsmith argues that whether you are trying to lead other people or lead yourself, the obstacles are very much the same. You still have to deal with all the variables in the environment: temptations pushing you away from your objective, motivation issues, and self-discipline issues. One result is that we tend to be superior planners but inferior doers. We talk a good game.

If you take a moment to think of a recent plan that you devised but never executed, you'll realize that Goldsmith is onto something here. Would a successful leader come up with a beautiful plan, throw it out to their employees, and then walk away and hope for the best? No.

To improve the odds of success, a leader would check in. They would look for obstacles to remove. They would want feedback on progression. They would be an active part of implementing the plan. We know this, yet we don't do it in our own work and lives. We don't manage execution.

What if the planner in each of us, like an effective leader with his or her subordinates, could size up the situation at any point during the day and adopt the appropriate management style for the doer in us? It's a simple two-step: measure the need, choose the style.

It gives you such a new perspective to think of your goals in this way. It allows you to step back from the situation and clearly see where you are getting off course. Just step into execution mode and out of planning mode, as any good hands-on leader would do.

We don't adequately weigh many of your past experiences/failures. This may be a willful denial of why you have failed at a task in the past or it could simply be that you've never taken the time for reflection.

It's not just environmental intrusions and unpredicted events that upset our plans. It's also our willful discounting of past experience. We make plans that are wholly contradicted by our previous actions.

The planner in us is convinced this time it will be different. Yet if you don't understand why you failed, you're doomed to repeat folly. Learning from our mistakes is key to increasing the odds to achieve our personal and professional goals.

Goldsmith's book is filled with insightful ideas. His decades of experience in coaching leaders is evident throughout the pages; both in the way he highlights his ideas with meaningful examples and the way he explains the evolution in his own thinking. You will find yourself identifying with his client's issues and walking through the solutions, endowing you with practical tools to help you change your own behavior, whatever your own "triggers" might be.

Step 128-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.
IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.
V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.
VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.
VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.
VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 18: Finance, Economics and Investment.

Step 129-Finance, Economics and Investment Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 16, before looking Investment.**
2. **Listen, Follow and Apply the following Books.**
    A. **How To Read A Book By Mortimer Adler**
    B. **Socratic Method, Logic and Questioning**
    C. **Benjamin Graham_ The Intelligent Investor.**
    D. **Common Sense Investing_ The Papers of Benjamin Graham.**
    E. **Common Sense on Mutual Funds.**
    F. **guide_to_money.**
    G. **Derivatives.**
    H. **Investment Management_ Portfolio Diversification, Risk.**
    I. **Little Book Of Common Sense Investing.**
    J. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
    K. The Financial Peace Planner A Step-By-Step Guide to Restoring Your Family's Financial Health.
    L. The Intelligent Investor_ The Definitive Book on Value Investing.
    M. The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.
    N. The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.
    O. The Total Money Makeover_ A Proven Plan for Financial Fitness.
    P. The-Richest-Man-In-Babylon.
    Q. Thou Shall Prosper_ Ten Commandments for Making Money.
    R. Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added, and Real Options.
    S. Warren Buffett and the Interpretation of Financial Statements_ The Search for the Company with a Durable Competitive.

T. Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.

Step 130-An Investment Approach That Works

There are as many investment strategies as there are investment opportunities. Some are good; many are terrible. Here's the one that I lean on the most when I'm looking for low risk and above average returns.

"The whole secret of investment is to find places where it's safe and wise to non-diversify. It's just that simple." Charlie Munger

Goal: An investment algorithm to lean on hard when it is available. Low-risk, long-duration, above-average returns.

There are many paths to investment heaven (and we've written on the topic before). The diversity of working approaches demonstrates that. However, fundamentally, any useful approach must do three things:

1. It must work in all conceivable financial environments.
2. It must be within the "circle of competence" and "circle of interestingness" of its user.
3. It must meet the moral criteria of its user.

I believe the system below satisfies the first criterion, and allows for all three. A 7–Element Algorithm for Equity Investing.

Everyone Wins

Successful businesses have indefinitely sustainable business systems: owners, employees, customers, suppliers, all content.

Ballast for the Storm

Look for a sustainable balance sheet, given the capricious nature of the world. Past bad events do not predict future bad events. Sometimes inefficient balance sheets allow companies to survive by positioning them for all environments, not just optimizing for one.

Different and Hard to Match

Candidates must occupy a structurally profitable, indefinitely sustainable business niche, allowing for the truism that all moats are subject to being crossed eventually. There must be an element of mystery.

Operational Soundness

Reliable execution of the “blocking and tackling” of operations is a must. Getting this wrong always costs big, and can ruin a good niche.

A Few Simple Variables

Allowing for the difficulty of predicting the future, candidates should have just a few reasonably predictable economic variables that will dominate their outcomes. In the words of Warren Buffett, “There are all kinds of businesses where we have no idea what they’ll earn this year, let alone any future year.” Look for boring investments, sexy is usually complicated and full of competition. Look for what’s staying the same.

Long Runway

You should be able to foresee an indefinite period of growth ahead, through some combination of market creation, market penetration, and pricing power.

Priced Attractively

Stock should be priced so that stock returns >= business returns, always including a margin for error in forward-looking estimates.

Seemingly missing is the concept of “good management,” but I consider this redundant in light of the first four elements. Any business meeting those criteria is being managed properly, and any investment going 7/7 has a very low probability of failure.

Notice that the word indefinite is used several times. This does not mean the same thing as infinite. There are no infinities in the business world. Indefinite means “as far out as can presently be seen.”

Caution: what psychologists call the “representativeness heuristic” puts us at risk of over-fitting to this or any algorithm. Always be on guard. In the words of Richard Feynman, “Never fool yourself, and remember that you are the easiest person to fool.”

Step 131-Investing: The Rules of the Road

Investing money can seem a little rudderless at times.

One day you hear that stocks are risky and the next that they're indispensable. Some days it seems like stocks only go up and sometimes that they only go down. Real estate used to seem like an automatic path to wealth, and then the housing crisis hit. For the uninitiated, it sometimes seems there are no central truths. And unlike certain fields, we all have to deal with money. We can't "opt out" from financial concerns unless we plan to live in a monastery, and it is useful for all of us to understand the basic ideas.

Investing is not a *science* but a *craft*, and a craftsman needs tools. In the case of investing, the tools are mostly mental. If we accumulate a few simple mental tools, we can start evaluating the claims of experts, salesmen, or simply well-intentioned friends.

The Rules of the Road

(1) The value of an asset depends entirely on the net cash it will generate from now to the hereafter.

This goes for a stock, an apartment house, a convenience store, a bakery, or an iPhone app startup. An asset only has value (in a financial sense) if it can generate net cash flow to its owner. The amount and timing of that cash determines the value of the business. The more cash to be expected and the sooner it's expected to come, the more valuable the asset is today. This is the fundamental truth about investing. Nothing escapes the orbit of future cash flows.

The other determinant of value is interest rates: The average future interest that could have earned if you bought a "risk-free" asset is the opportunity cost of the asset you're considering purchasing today. That risk-free interest rate determines the value of an asset's future cash flows to you today. (Although we don't recommend trying to compute the figure out to three decimal places.) If average risk-free interest rates are 6% over time and I offer you a chance to buy an apartment house that pays you 4% on cost, is that a good buy? You better feel confident that the 4% will grow over time, right? This basic form of reasoning can be applied to all types of cash-producing assets.

This is the thing you should be thinking about when you're instead thinking about what the Fed will be doing or what Jim Cramer said on TV or what the hot industry is or what the CEO of some company had for breakfast. Do you have any idea what the business or property will earn over the next five, ten, or twenty years in relation to what it earns now? This *Grand Unifying Theory* of investing gets discussed surprisingly little.

It also generates some sub-conclusions that aren't always recognized by lay investors and are frequently forgotten by professionals.

(A) What an asset has earned in the past does not determine its value. In stocks, looking at the last ten years of earnings is a useful exercise in trying to understand what type of business you're dealing with, but while it's a good guide, past earnings do not generate value. Future earnings do, and that goes for all types of assets. This means you must develop a view about the future, which we'll address again in point (2) below.

(B) An asset that never earns any net profit after all expenses has no financial value. Please let that sink in. It is common for businesses to obscure this basic fact, and promote all sorts of alternative methodologies with which you're supposed to see value. Book value, EBITDA, number of page views, number of users, brand recognition, and years of managerial experience do not, in and of themselves, tell you about the value of a business or an asset. The bare fact is that an asset must eventually generate net cash flows to its owner which are commensurate with the price paid in order for the investment to be worthwhile. Investing on another basis is, by definition, speculation.

(C) If you have no idea what an asset will earn in the future (at least in a general sense), then you have no idea what it's worth. And if you do not know what the asset is worth, then you have no idea whether you are over-paying or under-paying for it, and as an intellectually honest person, you should consider both possibilities at least equally likely.

(D) Any future cash flows out of an asset must also be subtracted in determining today's value. If a business is going to lose money for 10 years and only then start making it, it's worth a hell of a lot less than one which will make the same amount of money starting this year. This is another idea which gets surprisingly little play in relation to its obvious importance.

(2) Buying a share of stock is a buying share of the underlying business.

Although we're discussing general investment concepts, the stock market needs a bit more attention because of its seemingly abstract nature. No one gets confused as to what they're buying when they invest in a local dry-cleaner. Most fixed income instruments are priced in a fairly straightforward manner. But when it comes to businesses traded on the public exchanges, which we call stocks, all sorts of weird theories abound.

Stocks, for all of their labels and all of the strange fears and speculations around them, are no more than a piece of an underlying business pie. When you buy stock in a business, you are buying the right to the net cash flows that its assets produce. Stocks do not escape the orbit of financial gravity no matter what the Fed is doing or what CNBC is

saying. And buying into an index fund that owns many stocks means that you're now part-owner in all of the underlying businesses; your return comes from the success of their business operations. If American business as a whole keeps on trucking, the index fund will reflect their success, assuming you paid a rational price. That's why averaging into the indexes is such a common recommendation for non-professional investors. Buying individual businesses in the form of stocks carries a heavier burden of proof and much more specialized work.

One corollary to this idea is that stock prices tend to move around much more than intrinsic business values. If you were to take the ten year business record of any of a number of very stable corporations and then guess their high and low stock prices in the same period, you would almost certainly be surprised at the degree of variation. The reason for this can be found in point (3).

(3) Investing in any asset with uncertain cash flows requires an element of speculation about the future.

Discerning an asset's cash flows requires that we make intelligent guesses about a cloudy future. This idea has some deep corollaries:

(A) The more speculation needed to determine the value of the asset, the riskier it is all else equal, due to the higher probability of getting our estimates wrong. In the case of a 1-Year U.S. Treasury bill, we don't have to offer any speculation beyond assuming that the U.S. government will be solvent and paying 12 months from now and that the U.S. dollar will continue to be accepted as legal tender. (If this ceases to be true, we're all in big trouble.)

In the case of a biotechnology startup, on the other hand, our entire valuation is going to be based on speculation. In essence, the whole exercise of valuing such a start-up would be making difficult guesses about the future. The probability that we get all of our guesses correct approaches zero, although if we're correct enough about one or two important factors we might still make money. But we'll need great luck in doing so, whereas with the Treasury bill, we hardly need any luck at all.

(B) Investing in uncertain assets, including any kind of business-based investment like a farm or a technology stock, involves some difficult speculation, so it's easy to predict that at times, investors will get caught up in their enthusiasms and mis-price assets. Charlie Munger has commented that stocks are valued partly like Treasury bonds, with obvious cash flows estimated and discounted at rational rates, and partly like art or collectibles, with speculation that the price will go higher or lower because of popularity, trend, or hope.

The riskiest assets are the ones valued primarily on speculation because of our lack of ability to see into their economic future. That's why a corporate *bond* tends to be less risky than a *stock* — you only need to establish that the corporation will be solvent for the bond to be a good investment, whereas with the stock, you must make much more complicated estimates.

(C) We know from watching horse-race betting, casino gambling, and lottery participation that people are frequently willing to speculate on odds-against bets that can only hurt them financially in the long-run. We observe the same behavior in the stock market and in other markets as well. (There was, for example, a speculative farming boom in the 1980s.) Financial markets cannot be perfectly efficient because of the speculative element. As with (B) above, more uncertain assets tend to have a greater speculative element attached.

(D) Assets with predictable cash flows tend to be inherently lower-risk than ones without predictable cash flows. Let's use two different types of businesses to understand this point. We can be essentially certain that over the next year, Visa and MasterCard will make a tremendous amount of money which is closely related to the amount they made last year — their cash flows are based on the number of transactions made on their cards and the amount of money they collect per transaction. Both elements tend to be extremely stable on a day to day and year to year basis, with a tendency towards growth as new cards make it into circulation. Unless hundreds of millions of people stop using their credit and debit cards or million of merchants find a way to pay a lot less to these intermediaries (who collect very little to start), the businesses will maintain a useful degree of economic predictability. The number of transactions you made on your card last month and the month before pretty closely predicts how much you'll use it this month and the following one.

As we move out further to year 2, we can still be pretty sure that these characteristics will continue to hold, and thus we can predict with useful accuracy the kind of money Visa/Mastercard will make. The same goes for year 3. However, the longer we continue this exercise, the more our accuracy declines. Although things look pretty good this year, next year, and the year after, what about 30 years from now? By then, one can speculate on the possibility of certain changes to the financial system which might affect the economics of Visa/Mastercard. Our earnings estimate 30 years out is certain to be inaccurate even for a predictable business.

The opposite case is Twitter. Twitter has never shown a net profit to its shareholders and has not established a consistent business model which would allow it to do so. Thus, it would be very difficult to say what Twitter's earnings might be in the next year, let alone 30

years from now. On this basis, investing in the common stock of Twitter contains a much larger speculative element than Visa/Mastercard. An investment in Visa/Mastercard *at a fair price in relation to future earnings* can be said to have far less *risk* than an investment in Twitter. Notice that we don't come to this conclusion by saying that Visa/Mastercard are *riskless*, that we can predict their earnings *forever*, or that Twitter will never be a profitable investment. We are simply ranking potential investments on a sliding scale based on the predictability of their future cash flows. Any estimates will be necessarily imprecise, but they still have great value to us as investors.

(4) The price you pay determines the return you get.
Lower prices = higher returns.
You'll often hear fables about how now is the time to invest because "The market has done really well over the past few years" or because "My friend has made a lot of money on this stock, I think it's a good investment," or some similar statement about other kinds of financial assets; real estate properties, oil royalties, McDonald's franchises, etc.
Conversely, one frequently hears things like "That stock's gone way down recently, it seems pretty risky" or "My friend bought a bunch of real estate that went way down, I think real estate is risky" and other notions to that effect.
These thoughts are 180 degrees wrong because they fail to understand the point that low prices create high future returns and that high prices create low future returns. ("High" and "low" being in relation to underlying value.) If a stock trades at 50% of its recent high price, then you are buying the same future cash flows for half the price. If a stock trades at 200% of a recent low price, then the opposite is true; you're getting exactly half the value you would have before.
You should seek to buy assets with future cash earnings you can (roughly) estimate at prices that offer a fair return. The rest is almost always noise.

(5) Everyone has a unique circle of competence which allows them to understand certain things best and other things not at all.
We discussed above in point (3) that certain investment situations are inherently speculative, as with the case of Twitter common stock. But even within the realm of *knowable* investment choices, each investor has his or her own unique circle of competence which they bring to the analysis. In the circle are the things that, through life experience and/or accumulated study, one can fairly evaluate and expect to end up in the right ballpark. Outside of the circle are things we don't have the experience to understand.

Although this point seems simple to the point of banality, it is constantly violated even by smart and financially-savvy people. Many an expert in construction businesses or plumbing businesses or restaurant businesses have tried their hand at buying apartment houses or energy stocks only to find out that their expertise did not carry over. And it is thus for all of us: We are prisoners to our talents, and we're wise to think long and hard about what we really know and don't know.

For example, if you do not have the ability to read financial statements, understand microeconomics, and assess the future underlying cash flows of an individual business, are stocks truly in your circle of competence? If you don't know cap rates from Captain America, is it wise for you to try to get rich buying real estate properties? Unless and until we learn to be honest with ourselves, we will make mistakes that we don't need to make.

Investing does not have to be rocket science. Once you understand the central concepts and begin learning to apply them, all it takes is discipline and intellectual honesty. Anyone can be a successful investor, broadly defined, by sticking to their circle of competence and not straying outside of it, by not speculating when they think they're investing, and by always looking to pay a fair price in relation to what they're buying. These three central tenets, closely followed, can allow any intelligent person to operate safely in the financial world.

Step 132-Use Rules of Reading for Finance, Economics and Investment

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Investment.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
   II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
   III. **Method 23- Syntopicon Pages 600-641.**
   IV. **Method 24-The Craft of Research. Pages 642-881.**
   V. **Method 25-Research Books can Be Used. Pages 882-897.**
   VI. **Method 26-Investigative Journalism. Pages 898-923.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books To Investment

Step 133-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 134-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. The world never tells you that you're wrong; it only gives you outcomes.
3. Don't force. Don't resist. Have a beginner's mind. Let the world teach you.
4. **Reality will do a lot of the work for us if we simply align with it.** Most of the time we're simply adding friction because we want the world to work in the way we think it should.
5. If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care

about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything

outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models

allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's

got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do

put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 19: Deep Work, Shallow Work, Thinking, Logic and Mental Model

Step 135-Slow Down

1. **Do Not Rush Any Tasks I will do At Any Time.**
2. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
3. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**

I. We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.

II. The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.

III. But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.

IV. Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.

V. We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?

VI. As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always seems that the time-train is

pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

VII. Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.

VIII. When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.

IX. The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom — the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one

French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

X. Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

4. Do The Tasks Slowly, and Step By Step.

5. The Art of Slowing down and Do Not Rush Anything.

I. The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.

II. Too many of us see going nowhere as turning away from something rather than turning towards something.

III. Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”

IV. The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

V. The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.

VI. “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

Step 136-NOT MULTITASK.

1. Of course you can do more than one thing at once. The catch is you can't do more more than one thing at once that requires concentration. You can walk and chew gum, but you can't write an email and a report at the same time. When you're doing two things at once that are cognitively demanding, what you're really doing is switching back and forth very quickly from one task to another.
2. There is a mental cost—called a switching cost—to all of this multitasking. But that's not all it makes deep thinking impossible.
3. I think people that multitask pay a huge price. They think they're being extra productive, and I think they're (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don't have time to think about anything deeply. You're giving the world an advantage you shouldn't do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can't succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.
4. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: "You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube."
5. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don't do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.
6. Listen and Apply The Following Books:
    A. **The Multitasking Mind By Dario Saliveci**

Step 137-You Have Required To Do The Work For Deep Work, Thinking, Logic and Mental Model.

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what

happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad. Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 138-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important?

1. **After Reading, Analyse, Research and Arguing with the text, then I need to Decide and apply the Logic, Mental Models and thinking model that helps to understand the complexity of the world.**
2. **If you can think through things better than others, you'll have fewer problems and more free time. If you can't, you're going to spend a lot of time fixing your mistakes. Good decisions make the future easier, bad ones make it harder.**
3. **The investigators wanted to figure out how today's college students were able to multitask so much more effectively than adults. How do they manage to do it, the researchers asked? The answer, they discovered—and this is by no means what they expected—is that they don't. The enhanced cognitive abilities the investigators expected to find, the mental faculties that enable people to multitask effectively, were simply not there. In other words, people do not multitask effectively. And here's the really surprising finding: the more people multitask, the worse they are, not just at other mental abilities, but at multitasking itself.**
4. **Multitasking, in short, is not only not thinking, it impairs your ability to think. Thinking means concentrating on one thing long enough to develop an idea about it. Not learning other people's ideas, or memorizing a body of information, however much those may sometimes be useful. Developing your own ideas.**
5. **The best way to improve your ability to think is to spend large chunks of time thinking. Immersing ourselves in the problem offers insights that can't be gained otherwise. One way to force yourself to slow down and think is to write. Good writing requires good thinking.**
6. **Good writing, like good thinking, takes time.**

7. **One heuristic to tell how good someone is at making decisions is by how much time they have. The busiest people are often the ones who make the worst decisions. Not only do they have less time to dedicate to thinking about the problem, but they are often busy correcting poor decisions from the past.**
8. **Good thinking is expensive. Bad thinking costs a fortune. Rather than accept that good thinking requires time, most people try to bargain with reality. Unfortunately, that is not how the world works. If you want to think better, schedule time to write out your thoughts.**
9. **Why is important Different type of Thinking to the reality:**
    I. **Using Multidisciplinary Thinking to Approach Problems in a Complex World. Complex outcomes in human systems are a tough nut to crack when it comes to deciding what's really true. Any phenomena we might try to explain will have a host of competing theories, many of them seemingly plausible.**
    II. **Cross-checks" from a variety of sources of data, developing a 3D view of the landscape he's trying to assess**
    III. **So why is it important to be a multidisciplinary thinker? The answer comes from the Austrian philosopher Ludwig Wittgenstein, who said, "To understand is to know what to do." Could there be anything that sounds simpler than that? And yet it's a genius line—"to understand is to know what to do." How many mistakes do you make when you understand something? You don't make any mistakes. Where do mistakes come from? They come from blind spots, a lack of understanding. Why do you need to be multidisciplinary in your thinking? Because as the Japanese proverb says, "The frog in the well knows nothing of the mighty ocean.**
    IV. **You may know everything there is to know about your specialty, your silo, your "well," but how are you going to make any good decisions in life—the complex systems of life, the dynamic system of life—if all you know is one well?**
    V. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring. So out of necessity, we must approach the problem in a different way
    VI. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).

VII. Cross-checks" from a variety of sources of data, developing a 3D view of the landscape he's trying to assess.

VIII. *Look* we can't just rely on "plausible narratives" generated by folks like the historians. There are too many possibilities that could be correct. Nor can we rely purely on correlations (i.e., the rise in literacy statistically tracking the decline in violence) — they don't necessarily offer us a causative explanation. (Does the rise in literacy *cause* less violence, or is it vice versa? Or, does a third factor cause both?) However, if we layer in some other known facts from areas we can experiment on — say, psychology or cognitive neuroscience — we can sometimes establish the causal link we need or, at worst, a better hypothesis of reality.

IX. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.

X. What we end up with is not necessarily a bulletproof explanation, but probably the best we can do if we think carefully. A good cross-disciplinary examination with quantitative and qualitative sources coming into equal play, and a good dose of judgment, can be far more rigorous than the gut instinct or plausible nonsense type stories that many of us lazily spout.

XI. A Word of Caution: Although Pinker's "multiple vertices" approach to problem solving in complex domains can be powerful, we always have to be on guard for phenomena that we simply cannot explain at our current level of competence: We must have a "too hard" pile when competing explanations come out "too close to call" or we otherwise feel we're outside of our circle of competence. Always tread carefully and be sure to follow Darwin's Golden Rule: Contrary facts are more important than confirming ones. Be ready to change your mind, like Darwin, when the facts don't go your way.

XII. Using a true multidisciplinary understanding of things, Peter identifies two often overlooked, parabolic "Big Ideas": 1) Mirrored Reciprocation (go positive and go first) and 2) Compound Interest (being constant). A great "Life Hack" is to simply combine these two into one basic approach to living your life: "Go positive and go first, and be constant in doing it." There may be no better formula for living the best life you could possibly live.

Step 139-Intradisciplinary Thinking

1. **Step 1 Define Intradisciplinary Thinking-Intradisciplinary Thinking. Intradisciplinary Thinking is within a single academic discipline. This is simply thinking within a scope of one academic discipline. Intradisciplinary working is within one discipline. Like a single ingredient, clearly distinguishable. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**
    I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
    II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
    III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
    IV. Listen and Apply The Following Books:
        - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
        - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a

clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking**
    I. **Thinking Rate**
        - **You can’t force yourself to think faster. If you try, you’re likely to end up making much worse decisions. Here’s how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don’t come out of thin air. They’re supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the “hurry up!” message. They make managers feel like they’re moving things along faster. That way if work isn’t getting done, it’s not their fault. But, DeMarco writes, they don’t lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn’t mean better productivity is that the rate at which we think is fixed. We can’t force ourselves to start making faster decisions right now just because we’re faced with an unrealistic deadline. DeMarco writes, “*Think rate is fixed. No matter what you do, no matter how hard you try, you can’t pick up the pace of thinking.*”**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**
            - **Thermodynamics.**
            - **Inertia.**

- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**
  - **Supporting Idea: Complex Adaptive Systems.**
  - **Critical mass.**

- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. **Mental Models, Investing and you volume 1 by Anshul Khare.**
VII. **Mental Models- 349 Models Explained to Carry Around in Your Head.**
VIII. **MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.**
IX. **Seeking Wisdom_ From Darwin to Munger.**
X. **Thinking, Fast and Slow.**
XI. **Investing_ The Last Liberal Art.**
XII. **Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.**
XIII. **General Mental Models.**
XIV. **The sense of style _ the thinking person's guide to writing in the 21st century.**
XV. **Extreme Ownership.**
XVI. **Good Strategy and Bad Strategy.**
XVII. **The Complete Art of War.**
XVIII. **The Art of War_ Complete Text and Commentaries.**

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.**
XV. **Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.**
XVI. **Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.**
XVII. **Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.**

XVIII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XIX.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XX.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXI.CRITICAL THINKING_ Consider the Verdict

XXII.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXIII.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXIV.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXV.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**

- **Science and Superstition.**

E. Mathematical Mental Model.

I. **Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.**
II. **Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.**
III. **Listen, Use and Apply Basic Mathematics By Tussy For Thinking.**
IV. **Listen, Use and Apply Calculus By Anton BAivens For Thinking.**
V. **Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.**
VI. **Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.**
VII. **Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.**
VIII. **Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.**
IX. **Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.**

F. Thinking Like Mental Tools.

I. How to Think Like a Mathematician.

II. How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.

III. How to Think Like Leonardo da Vinci.

IV. Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.

V. Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.

VI. Think Like an Entrepreneur, Act Like a CEO.

VII. How Successful People Think_ Change Your Thinking, Change Your Life.

VIII. How Professors Think.

IX. Learning To Think Like Lawyer.

X. Mastermind_ How to Think Like Sherlock Holmes.

XI. How to Think Like Scientist.

XII. How Doctors Think.

XIII. How to Think Like Bill Gates.

XIV. How to Think Like Sherlock.

XV. How to think like Leonardo Da Vinci _ seven steps to genius every day.

XVI. Think Like A Lawyer.

XVII. Act Like a Leader, Think Like a Leader.

XVIII. How not to be wrong. The power of mathematical thinking .

XIX.

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**

H. Risk Management Mental Tools.
    I. The-essentials-of-risk-management.
    II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.
    III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.
    IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.
    V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.
    VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.
    IX. Enterprise_risk_management.
    X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.
    XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.
    XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.
    XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.
    XVI. Implementing Enterprise Risk Management.
    XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.
    XVIII. Principles of Risk Management and Insurance.
    XIX. Quantitative Financial Risk Management.
    XX. CFA Risk Management.
    XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Statistics Mental Tools.**
    I. **Applied Statistics and Probability for Engineers.**
    II. **Basic Business Statistics.**

K. **Biblical Thinking Mental Tool.**
    I. **Think Biblically!_ Recovering a Christian Worldview.**

L. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

M. Econometric Mental Tools,

I. Econometrics
II. Econometric Analysis.
III. Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.
IV. Introductory econometrics. A modern approach.
V. Introductory Econometrics.
VI. Introductory Econometrics_ A Modern Approach.
VII. Handbook of Financial Econometrics and Statistics.
VIII. Econometrics for Financial Applications.
IX. Econometrics For Dummies.
X. Econometric Analysis of Cross Section and Panel Data.
XI. Econometric Analysis.
XII. Basic econometrics._ Student solutions manual for use with Basic econometrics.
XIII. Basic Econometrics.

N. Investment Mental Model.

I. Benjamin Graham_ The Intelligent Investor.
II. Common Sense Investing.
III. Common Sense on Mutual Funds.
IV. Complete_guide_to_money.
V. Derivatives, options by Hull.
VI. The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.
VII. The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.
VIII. The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.
IX. he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.
X. The Total Money Makeover_ A Proven Plan for Financial Fitness.
XI. The-Richest-Man-In-Babylon.
XII. Thou Shall Prosper_ Ten Commandments for Making Money.

XIII. Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.
XIV. Warren Buffett and the Interpretation of Financial Statements.
XV. Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.
XVI. The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.
XVII. The Intelligent Investor.
XVIII. The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.
XIX. Competitive advantage_ creating and sustaining superior performance _ with a new introduction .
XX. Competitive Advantage of Nations.
XXI. Fundamental_&_Technical Analysis_Manual.

O. Corporate Finance.
   I. CORPORATE FINANCE An Introduction.

P. Biology.
   I. Developmental Biology.
   II. Encyclopedia of Biology.
   III. Encyclopedia of evolutionary biology.
   IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
   V. Human Embryology and Developmental Biology.
   VI. Introduction to the Biology of Marine Life
   VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
   I. College Physics - Physics and Astronomy.
   II. Encyclopedia of applied physics.
   III. Fundamentals of Physics Textbook.
   IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
   V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. **Strategem.**
    I. **Treasons, Strategems and Spoils.**
    II. **36 Strategens.**
    III. **The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?**
    IV. **Stratagem, deception and surprise in war.**
    V. **THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.**
    VI. **Stratagem and spoils.**
    VII. **STRATAGEM Deception and Surprise in War.**
    VIII. **Secrecy and stratagem understanding Chinese strategic culture.**
    IX. **Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.**
    X. **The Thirty-Six Strategies of Ancient China.**

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 140-Multidisciplinary Thinking

1. **Step 1 Define Multidisciplinary Thinking. Multidisciplinary thinking taking combination of various disciplines that maintain their unique perspective unchanged. They share a connection that us not collaborative, but collective and can work together to create a more complicated picture of Reality. The topic of analysis will best expose its different characteristics by exploring different perspectives, using the techniques and observations provided by variety of developed disciplines. Multidisciplinarity is characterised within the literature as the least integrative from of integrated research—yet, equally, it is arguably the most attainable. Multidisciplinarity features several academic disciplines in a thematically based investigation with multiple goals—essentially, studies "co-exist in a context" . While researchers aim to share knowledge and compare results from the studies there is no attempt to cross boundaries or generate new integrative knowledge. Each member is able to contribute a professional perspective on the issue. Thus the advantage of this approach is that, while the research approaches are disciplinary, the different perspectives on the issue can be gathered into one report for assessment. There is some debate on the extent to which research is coordinated and integrated. While some suggest that multidisciplinary research is coordinated, but not integrated; others contend that there is no coordination, but there is integration at a low level. In general, it is hard to imagine that the research is not, in some way coordinated whilst maintaining even a slight degree of coherence, but it may indeed not be integrated. Multidisciplinary working brings disciplines together so they can learn from each other, drawing on the mix of disciplinary knowledge. It's like a salad: the original ingredients are intact, but the flavours begin to blend. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a

clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**
            - **Thermodynamics.**
            - **Inertia.**

- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**
  - **Supporting Idea: Complex Adaptive Systems.**
  - **Critical mass.**

- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Seeking Wisdom_ From Darwin to Munger.
X. Thinking, Fast and Slow.
XI. Investing_ The Last Liberal Art.
XII. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XIII. General Mental Models.
XIV. The sense of style _ the thinking person's guide to writing in the 21st century.
XV. Extreme Ownership.
XVI. Good Strategy and Bad Strategy.
XVII. The Complete Art of War.
XVIII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.**
XV. **Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.**
XVI. **Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.**
XVII. **Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.**

XVIII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XIX.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XX.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXI.CRITICAL THINKING_ Consider the Verdict

XXII.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXIII.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXIV.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXV.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**

- **Science and Superstition.**

E. Mathematical Mental Model.

I. **Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.**
II. **Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.**
III. **Listen, Use and Apply Basic Mathematics By Tussy For Thinking.**
IV. **Listen, Use and Apply Calculus By Anton BAivens For Thinking.**
V. **Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.**
VI. **Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.**
VII. **Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.**
VIII. **Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.**
IX. **Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.**

F. Thinking Like Mental Tools.

I. How to Think Like a Mathematician.

II. How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.

III. How to Think Like Leonardo da Vinci.

IV. Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.

V. Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.

VI. Think Like an Entrepreneur, Act Like a CEO.

VII. How Successful People Think_ Change Your Thinking, Change Your Life.

VIII. How Professors Think.

IX. Learning To Think Like Lawyer.

X. Mastermind_ How to Think Like Sherlock Holmes.

XI. How to Think Like Scientist.

XII. How Doctors Think.

XIII. How to Think Like Bill Gates.

XIV. How to Think Like Sherlock.

XV. How to think like Leonardo Da Vinci _ seven steps to genius every day.

XVI. Think Like A Lawyer.

XVII. Act Like a Leader, Think Like a Leader.

XVIII. How not to be wrong. The power of mathematical thinking .

XIX.

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII. Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII. Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV. The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategen.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 141-CrossDisciplinary Thinking

1. **Step 1 Define CrossDisciplinary Thinking. Crossdisciplinary thinking applies to several types of cross border interactions, looking at one discipline from an other's viewpoint. You will be working together to move knowledge from one discipline to the other. For example, views from political science are being used in fictional literature to understand political dispute. As part of the current university, cross-disciplinarity has a long background, particularly among disciplines that share borders or those with a shared focus. Physics and astronomy disciplines demonstrate this background. Physic studies a law that determines the universe; these laws extend to non-Earthly contexts (to the best of modern knowledge). Physics and astronomy programs are therefore usually located in the same academic department, providing for cross-disciplinary interaction. Crossdisciplinary working views one discipline from the frame of reference of another. It's like lots of different ingredients on a plate, but without chopping them up and mixing them. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:**
    I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
    II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
    III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
    IV. Listen and Apply The Following Books:
        - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**

- **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a

clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**
            - **Thermodynamics.**
            - **Inertia.**

- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**
  - **Supporting Idea: Complex Adaptive Systems.**
  - **Critical mass.**

- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Seeking Wisdom_ From Darwin to Munger.
X. Thinking, Fast and Slow.
XI. Investing_ The Last Liberal Art.
XII. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XIII. General Mental Models.
XIV. The sense of style _ the thinking person's guide to writing in the 21st century.
XV. Extreme Ownership.
XVI. Good Strategy and Bad Strategy.
XVII. The Complete Art of War.
XVIII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.**
XV. **Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.**
XVI. **Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.**
XVII. **Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.**

XVIII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XIX.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XX.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXI.CRITICAL THINKING_ Consider the Verdict

XXII.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXIII.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXIV.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXV.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**

- **Science and Superstition.**

E. Mathematical Mental Model.

I. **Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.**
II. **Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.**
III. **Listen, Use and Apply Basic Mathematics By Tussy For Thinking.**
IV. **Listen, Use and Apply Calculus By Anton BAivens For Thinking.**
V. **Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.**
VI. **Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.**
VII. **Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.**
VIII. **Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.**
IX. **Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.**

F. Thinking Like Mental Tools.

I. **How to Think Like a Mathematician.**
II. **How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.**
III. **How to Think Like Leonardo da Vinci.**
IV. **Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.**
V. **Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.**
VI. **Think Like an Entrepreneur, Act Like a CEO.**
VII. **How Successful People Think_ Change Your Thinking, Change Your Life.**
VIII. **How Professors Think.**
IX. **Learning To Think Like Lawyer.**
X. **Mastermind_ How to Think Like Sherlock Holmes.**
XI. **How to Think Like Scientist.**
XII. **How Doctors Think.**
XIII. **How to Think Like Bill Gates.**
XIV. **How to Think Like Sherlock.**
XV. **How to think like Leonardo Da Vinci _ seven steps to genius every day.**
XVI. **Think Like A Lawyer.**
XVII. **Act Like a Leader, Think Like a Leader.**
XVIII. **How not to be wrong. The power of mathematical thinking .**
XIX.

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**

H. Risk Management Mental Tools.
    I. The-essentials-of-risk-management.
    II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.
    III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.
    IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.
    V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.
    VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.
    VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.
    IX. Enterprise_risk_management.
    X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.
    XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.
    XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.
    XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.
    XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.
    XVI. Implementing Enterprise Risk Management.
    XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.
    XVIII. Principles of Risk Management and Insurance.
    XIX. Quantitative Financial Risk Management.
    XX. CFA Risk Management.
    XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. **Statistics Mental Tools.**
    I. **Applied Statistics and Probability for Engineers.**
    II. **Basic Business Statistics.**

L. **Biblical Thinking Mental Tool.**
    I. **Think Biblically!_ Recovering a Christian Worldview.**

M. **Econometric Mental Tools,**
    I. **Econometrics**
    II. **Econometric Analysis.**
    III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**
    IV. **Introductory econometrics. A modern approach.**
    V. **Introductory Econometrics.**
    VI. **Introductory Econometrics_ A Modern Approach.**
    VII. **Handbook of Financial Econometrics and Statistics.**
    VIII. **Econometrics for Financial Applications.**
    IX. **Econometrics For Dummies.**
    X. **Econometric Analysis of Cross Section and Panel Data.**
    XI. **Econometric Analysis.**
    XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**
    XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.

- **I. Encyclopedia of Automotive Engineering.**
- **II. Encyclopedia of Information Science and Technology.**
- **III. Encyclopedia of RF and Microwave Engineering.**
- **IV. Encyclopedia-Environmental-Science.**
- **V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.**
- **VI. Encyclopedia of Aerospace Engineering.**

T. Psychology.

- **I. Handbook of Psychology Volume 1-12.**
- **II. Encyclopedia of Psychology.**

U. Philosophy.

- **I. Routledge Encyclopedia of Philosophy.**
- **II. Stanford Encyclopedia of Philosophy.**

V. Strategem.

- **I. Treasons, Strategems and Spoils.**
- **II. 36 Strategens.**
- **III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?**
- **IV. Stratagem, deception and surprise in war.**
- **V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.**
- **VI. Stratagem and spoils.**
- **VII. STRATAGEM Deception and Surprise in War.**
- **VIII. Secrecy and stratagem understanding Chinese strategic culture.**
- **IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.**
- **X. The Thirty-Six Strategies of Ancient China.**

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 142-Interdisciplinary Thinking

1. **Step 1 Define Interdisciplinary Thinking.”Interdisciplinary” comes from the process of merging and integrating different disciplines together with their methodologies and presumptions. It includes crossing the formal borders between sciences and combining their methods in favor of a common purpose. ” Methodologies and assumptions belonging to different disciplines are connected and modified in order to adapt to the needs of the research, creating new tools which allow for the investigation of difficult subjects that surpass the possibilities of a single discipline. In the field of architecture, for instance, complex topics such as SDGs, urban transitional, sustainability, and design imply various approaches that combine chemistry, drafting for design, engineering design, fundamentals of physics, architectural illumination and electrical systems. Interdisciplinarity may be regarded as a step up from multidisciplinarity. Interdisciplinary studies focus on addressing specific ‘real world’ system problems and, as a result, the research process forces participants (from a variety of unrelated disciplines) to cross boundaries to create new knowledge. Essentially the major difference from multidisciplinarity lies in the *level of integration and cooperation* as these projects seek to bridge disciplinary viewpoints and potentially enable the examination of existing accumulated knowledge from the perspective of a neighboring discipline. Huutoniemi *et al.* provide a relatively comprehensive typology of interdisciplinarity along with specific indicators for research teams to grasp on to. At the same time, Schmidt outlines the importance of a basic literacy in the philosophy of science related to doing such work as well as the kinds of interdisciplinarity. The necessity of bridging disciplinary viewpoints generally (as with transdisciplinarity) stems from the need to address complex “problems that involve an interface of human and natural systems” and, as such, the integration of natural and social scientists is standard practice for interdisciplinary research. This approach involves bringing people and ideas together from different disciplines to jointly frame a problem, agree on a methodological approach, and analyze data. Thus interdisciplinary research requires a much more collaborative approach to problem formulation and methodological development than multidisciplinary research. Interdisciplinary**

working starts to take a new form, integrating knowledge and methods from different disciplines and synthesising into a new whole. It's like a stew: the original ingredients are still partly distinguishable, but the overall is a blended pot of mixed flavours. Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the

complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can't force yourself to think faster. If you try, you're likely to end up making much worse decisions. Here's how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don't come out of thin air. They're supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the "hurry up!" message. They make managers feel like they're moving things along faster. That way if work isn't getting done, it's not their fault. But, DeMarco writes, they don't lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn't mean better productivity is that the rate at which we think is fixed. We can't force ourselves to start making faster decisions right now just because we're faced with an unrealistic deadline. DeMarco writes, "*Think rate is fixed. No matter what you do, no matter how hard you try, you can't pick up the pace of thinking.*"**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**
            - **Thermodynamics.**
            - **Inertia.**

- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**
  - **Supporting Idea: Complex Adaptive Systems.**
  - **Critical mass.**

- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Seeking Wisdom_ From Darwin to Munger.
X. Thinking, Fast and Slow.
XI. Investing_ The Last Liberal Art.
XII. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XIII. General Mental Models.
XIV. The sense of style _ the thinking person's guide to writing in the 21st century.
XV. Extreme Ownership.
XVI. Good Strategy and Bad Strategy.
XVII. The Complete Art of War.
XVIII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.**
XV. **Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.**
XVI. **Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.**
XVII. **Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.**

XVIII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XIX.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XX.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXI.CRITICAL THINKING_ Consider the Verdict

XXII.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXIII.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXIV.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXV.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**

- **Science and Superstition.**

E. Mathematical Mental Model.

I. **Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.**
II. **Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.**
III. **Listen, Use and Apply Basic Mathematics By Tussy For Thinking.**
IV. **Listen, Use and Apply Calculus By Anton BAivens For Thinking.**
V. **Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.**
VI. **Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.**
VII. **Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.**
VIII. **Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.**
IX. **Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.**

F. Thinking Like Mental Tools.

I. **How to Think Like a Mathematician.**
II. **How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.**
III. **How to Think Like Leonardo da Vinci.**
IV. **Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.**
V. **Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.**
VI. **Think Like an Entrepreneur, Act Like a CEO.**
VII. **How Successful People Think_ Change Your Thinking, Change Your Life.**
VIII. **How Professors Think.**
IX. **Learning To Think Like Lawyer.**
X. **Mastermind_ How to Think Like Sherlock Holmes.**
XI. **How to Think Like Scientist.**
XII. **How Doctors Think.**
XIII. **How to Think Like Bill Gates.**
XIV. **How to Think Like Sherlock.**
XV. **How to think like Leonardo Da Vinci _ seven steps to genius every day.**
XVI. **Think Like A Lawyer.**
XVII. **Act Like a Leader, Think Like a Leader.**
XVIII. **How not to be wrong. The power of mathematical thinking .**
XIX.

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategem.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 143 - Transdisciplinary Thinking

1. **Step 1 Define Transdisciplinary Thinking. Transdisciplinary For one of the first times was stated in a 1973 OECD report on environmental education. Transdisciplinarity describes a study that focuses on issues that cross the borders of two or even more disciplines "when a common set of axioms prevail, related to but lying beyond and complementing traditional disciplines. With the other word, principles or techniques originally developed by one discipline but now commonly used by others. Transdisciplinarity is probably the most desirable and yet difficult to obtain form of integrated research. Some researchers are, in fact, skeptical about whether it can be achieved at all. For example, Pohl observes that the extent of the requirements for transdisciplinary research suggest that it is to some extent "a 'megalomaniac' endeavour." In addition, Tress *et al.* note that, despite the best intentions, "Transdisciplinary landscape research is an exception, even interdisciplinarity is seldom reached." Such studies seek a transcendence of disciplinary perspectives (in some cases "redrawing the disciplinary map" into a broader framework in "true systemic fashion" that involves practical engagement with "local and regional issues of concern". In this sense transdisciplinarity is the highest form of integrated project, involving not only multiple disciplines, but also multiple *non-academic participants* (e.g., land managers, user groups, the general public) in a manner that combines interdisciplinarity with participatory approaches. Walter *et al.* suggest that transdisciplinary research is characterised by "a process of collaboration between scientists and non-scientists on a specific real world problem" and combines scientific research with the generation of decision-making capacity for the involved stakeholders or as Schmidt describes it a "problem with the problems". While Mobjörk *et al.* suggest that transdisciplinarity can be divided into "consulting" (stakeholders are consulted but not incorporated in the research process) and "participatory" (stakeholders are incorporated and considered equally valuable) forms, we argue that non-participatory forms of transdisciplinarity are, in fact, interdisciplinary as transdisciplinary approaches are widely defined by their engagement of non-scientists in the research process. The variety included in many transdisciplinary frameworks is largely the result of the strong problem solving**

objectives of the research and the need for flexible methodologies in transdisciplinary research is driven by this problem solving approach as "methodologies employed in transdisciplinary research needs to correspond to and reflect the problem and context under investigation". To ensure that all relevant disciplines are represented within transdisciplinary projects, a pluralistic (rather than unitary) approach to methodology is standard. This focus on the problem, rather than the disciplines excludes the possibility of unidirectional research. As Hadorn *et al.* observe, within a transdisciplinary environment, no single discipline has intellectual precedence. In fact, some researchers go so far as to equate transdisciplinarity with holism, arguing that "It solves disagreements and differences in knowledge and scientific approaches through dialectic thinking, not majority rule, tradition or compromise" [5] or that it is "a different manner of seeing the world, more systematic and more holistic". As such, Rapport suggests that "the essential element of transdisciplinarity is 'transcendence'—a creative process whereby a framework for characterizing larger level processes transcends frameworks used to characterize the parts". (For more on creativity and serendipity involved in research that reaches beyond a single discipline.) Political ecology is an example of a transdisciplinary sub-discipline that has emerged from the transcendence of a number of disciplines—and has existed under the umbrella of a larger disciplinary body (Geography) since the 1970s though others associate with interdisciplinary work . In promoting a holistic perspective, transdisciplinarity requires considerable effort on the part of engaged researchers to open up their research to alternative ways of thinking, or, as Giri suggests to "overcome one's disciplinary chauvinism" and develop "an openness to perspectives of other disciplines". The adoption of a holistic perspective leads to another key feature of transdisciplinarity—that it has high aims of reconstituting and rearranging the nature of disciplinary knowledge thus creating, through fusion across arbitrary intellectual boundaries, new synthesized disciplines with which to address the real-world problems at hand explicitly through collaboration. The demands placed on researchers to collaborate and 'overcome chauvinism' means that transdisciplinarity, of all the integrated research forms, has a strong focus on the building of personal relationships and joint understandings. Establishing trust and understanding between researchers within the projects is thus a key objective of building

transdisciplinary capacity. Transdisiplinary working produces a new, novel form or way of working beyond the original disciplinary boundaries. It's like a cake: you can no longer see the form of the ingredients as they have taken on a different shape and flavour.Let's review the process that Pinker has laid out, one that we might think about emulating as we examine the causes of complex phenomena in human systems:

I. We observe an interesting phenomenon in need of explanation, one we feel capable of exploring.
II. We propose and examine competing hypotheses that would explain the phenomena (set up in a falsifiable way, in harmony with the divide between science and pseudoscience laid out for us by the great Karl Popper).
III. We examine a cross-section of: Empirical data relating to the phenomena; sensible qualitative inference (from multiple fields/disciplines, the more fundamental the better), and finally; "Demonstrable" aspects of nature we are nearly certain about, arising from controlled experiment or other rigorous sources of knowledge ranging from engineering to biology to cognitive neuroscience.
IV. Listen and Apply The Following Books:
    - **How we can Assess the Level of Interdisciplinarity and Transdisciplinarity of Academic Institutions? By Mahmood Ramezanzade**
    - **Detection of Distributed Denial of Service (DDoS) Attacks in IOT Based Monitoring System of Banking Sector Using Machine Learning Models By Muhsmmsf Shafiq**

2. **Step 2-Do Work Required to Have an Opinion on Any Topic and Anything.**
    I. Most people go through life not really getting any smarter. Why? They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    II. You can acquire knowledge if you want it. In fact, there is a simple formula, which if followed is almost certain to make you smarter over time. Simple but not easy. It involves a lot of hard work."The best thing a human being can do is to help another human being know more."
    III. How to Get Smarter Read. A lot.Warren Buffett says, "I just sit in my office and read all day."What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, "Read 500 pages like this every week. That's how knowledge builds up, like compound interest." All of us can build our knowledge, but most of us won't put in the effort. "Go to bed smarter than when you woke up."
    IV. Knowledge accumulation as an acquired, rather than natural, genius. And he'd give all the credit to the studying;.
    V. The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage … the list goes on.
    VI. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some op-ed in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    VII. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

VIII. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?

- I have to do the reading.
- I have to do Thinking and mental model.
- I have to talk to competent people and understand their arguments.
- I have to think about the key variables and how they interact over time.
- I have to listen and chase down arguments that run counter to your views.
- I have to think about how you might be fooling yourself.
- I have to see the issue from multiple perspectives.
- I have to think.
- I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.

IX. If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

X. We all are learning, modifying, or destroying ideas all the time. Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side. As Rabbi Moses ben Maimon (1135–1204), commonly known as Maimonides, said: "Teach thy tongue to say I do not know, and thou shalt progress."

XI. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, "I can hold this view because I can't find anyone else who can argue better against my view." Great thinkers, like Charles Darwin, did the work. And it's one of the biggest reasons he's buried at Westminster Abbey.

XII. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

XIII. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.

- Circle of Competence:
  - **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve —after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time,

work to expand that circle but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

- The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.
  - The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

  - The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
  - How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge. Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the

complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

- Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:
  - “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.
  - In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.
  - This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

XIV. The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself what are the arguments on the other side. It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline.

XV. Doing the work means you can't make up your mind with a high degree of confidence right away. Doing the work forces you to challenge your beliefs because you have to argue from both sides. You become the somewhat impartial judge. What's on trial is your opinion. If you want to work with the world rather than against it, one of the major leverage points you can put effort into is how to distinguish between the people who've done the work and those who haven't. The ones who have will pass the Batesian Mimicry Test.

XVI. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

XVII. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

XVIII. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

XIX. We read a lot. I don’t know anyone who’s wise who doesn’t read a lot. But that’s not enough: You have to have a temperament to grab ideas and do sensible things. Most people don’t grab the right ideas or don’t know what to do with them.

XX. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

3. **Step 3- Slow Down**
    I. **Do Not Rush Thinking Process, and Do it Very Slow.**
    II. **Do Not Rush Any Task I will do At Any Time.**
    III. **Listen and Apply Book "The Slow Fix Solve Problems, Work Smarter, and Live Better in a World Addicted to Speed"**
    IV. **Listen and Apply Book *In Praise Of Slowness Challenging the Cult of Speed BY Carl Honore.**
        - We live in a world scarce of understanding and abundant with information. We complain that we never have any free time yet we seek distraction. If work can't distract us, we distract ourselves. We crave perpetual stimulation and motion. We're so busy that our free time comes in 20 second bursts, just long enough for us to read the gist and assume we understand. If we are to synthesize learning and understanding we need time to think.
        - The modern storm of bits and stimulation, relents only when we sleep. (And then only if we remember to turn off the phone.) Lost in all of this is the art of stillness. We live in a world with more information than ever and yet we understand less. We have come into the belief that the simple act of reading confers understanding. Worse, most of our reading is elementary reading, or skimming — a far cry from syntopical reading, which seems more fertile for the mind willing to do the work.
        - But that's just it. We don't want, or can't find the time, to do the work that's required to hold an opinion. It's much easier to simply read the opinions of another and let them think for us.
        - Understanding comes from focusing, chewing, and relentlessly ragging on a problem. It comes with false starts, dead ends, and frustration. Thinking requires time and space. It's slow. It means saying I don't know. In short, thinking is everything the modern workplace is designed to eradicate.
        - We're expected to have an opinion about everything and yet our time to think is near zero. We hold more opinions than ever but have less understanding. We don't even understand ourselves. How could it be otherwise?
        - As Milan Kundera wrote in his 1996 novella Slowness, "When things happen too fast, nobody can be certain about anything, about anything at all, not even about himself. "In our fast-moving modern world, it always

seems that the time-train is pulling out of the station just as we reach the platform. No matter how fast we go, no matter how cleverly we schedule, there are never enough hours in the day."

- Carl Honore, wrote a book, In Praise of Slowness: Challenging the Cult of Speed, to explore why we're always in such a rush, what if anything is the cure for time-sickness, and whether it's desirable to slow down. The book is not an all-out declaration of war against speed. Speed has helped to remake our world in ways that are wonderful and liberating. Who wants to live without the Internet or jet travel? The problem is that our love of speed, our obsession with doing more and more in less and less time, has gone too far; it has turned into an addiction, a kind of idolatry. Even when speed starts to backfire, we invoke the go-faster gospel.
- When we rush, we skim the surface, and fail to make real connections with the world or other people." Moreover we don't make connections with ideas. We don't synthesize. We don't test theories over time. We don't play with ideas.
- The implications on thinking are fascinating. We are all fast-thinkers now. We have forgotten how to look forward to things, and how to enjoy the moment when they arrive. Restaurants report that hurried diners increasingly pay the bill and order a taxi while eating dessert. Many fans leave sporting events early, no matter how close the score is, simply to steal a march on the traffic. Then there is the curse of multi-tasking. Doing two things at once seems so clever, so efficient, so modern. And yet what it often means is doing two things not very well. Like many people, I read the paper while watching TV— and find that I get less out of both. In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts. Boredom— the word itself hardly existed 150 years ago— is a modern invention. Remove all stimulation, and we fidget, panic and look for something, anything, to do to make use of the time. When did you last see someone just gazing out the window on a train? Everyone is too busy reading the paper, playing video games, listening to iPods, working on the laptop, yammering into mobile phones. Instead of thinking deeply, or letting an idea simmer in the back of the mind, our instinct now is to reach for the

nearest sound bite. In modern warfare, correspondents in the field and pundits in the studio spew out instant analyses of events as they occur. Often their insights turn out to be wrong. But that hardly matters nowadays: in the land of speed, the man with the instant response is king. With satellite feeds and twenty-four-hour news channels, the electronic media is dominated by what one French sociologist dubbed “le fast thinker”— a person who can, without skipping a beat, summon up a glib answer to any question.

- Fast eats time. One consequence of fast is that we make poor decision after poor decision. Those decisions don’t go away never to be seen again. It’s not like we make a bad decision and we’re done with it. No, the consequences are much worse. Poor decisions eat time. They come back to haunt you. They create issue after issue. They feed into the perpetual motion machine of busyness. And in a culture where people wear busyness as a badge of honor bad decisions actually lead us to think that we’re doing more.

V. Do The Tasks Slowly, and Step By Step.

VI. The Art of Slowing down and Do Not Rush Anything.

- The Art of Stillness is a persuasively argued case for the pleasures of slowing down and being in one place.Today we’re going faster and faster in search of contentment and meaning. This is largely a recipe for ensuring we will never be happy. We have the sense, too often, of running at top speed and never being able to catch up.
- Too many of us see going nowhere as turning away from something rather than turning towards something.
- Going nowhere isn’t about turning your back on the world; it’s about stepping away now and then so that you can see the world more clearly and love it more deeply. “There is nothing either good or bad, but thinking makes it so.”
- The idea behind choosing to sit still long enough to learn about yourself is simple and has been around for ages. Marcus Aurelius and Epictetus reminded us many millennia ago that it’s how we respond to our experiences, not the experiences themselves, which shape us.

- The greatest weapon against stress is our ability to choose one thought over another. Part of making better decisions is making time to think. Something that few of us are able to do.
- “Our creations come not when we’re out in the world, gathering impressions, but when we’re sitting still, turning those impressions into sentences.

4. Step 4- Do not Multitask.

I. Of course you can do more than one thing at once. The catch is you can’t do more more than one thing at once that requires concentration. You can walk and chew gum, but you can’t write an email and a report at the same time. When you’re doing two things at once that are cognitively demanding, what you’re really doing is switching back and forth very quickly from one task to another.

II. There is a mental cost—called a switching cost—to all of this multitasking. But that’s not all it makes deep thinking impossible.

III. I think people that multitask pay a huge price. They think they’re being extra productive, and I think they’re (out of their mind). I use the metaphor of the one-legged man in the ass-kicking contest. I think when you multi-task so much, you don’t have time to think about anything deeply. You’re giving the world an advantage you shouldn’t do. Practically everybody is drifting into that mistake. Concentrating hard on something that is important is. I can’t succeed at all without doing it. I did not succeed in life by intelligence. I succeeded because I have a long attention span.

IV. It sounds counter-intuitive but if you want to increase discretionary time and reduce stress you need to schedule time to think. The tiny fragments of time many of us find ourselves with have a negative effect on our ability to think deeply about a problem. Furthermore they impede our ability to learn — we stay at a surface level and never move into a deep understanding. Deresiewicz warns: “You simply cannot (think) in bursts of 20 seconds at a time, constantly interrupted by Facebook messages or Twitter tweets, or fiddling with your iPod, or watching something on YouTube.”

V. The opposite approach is to focus on a problem or subject and try to achieve a deep fluency. How many of us, however, have time? We don’t do the work required to have an opinion. Instead we operate with surface knowledge. We tackle problems with the first thought that comes to mind. Because we make a

poor initial decision, we spend countless hours attempting to correct it. No wonder we have no time to think. We're not heeding the advice of Joseph Tussman and letting the world do the work for us.

VI. Listen and Apply The Following Books:

- **The Multitasking Mind By Dario Saliveci**

5. **Step 5-What is Thinking/**
    I. **Thinking Rate**
        - **You can’t force yourself to think faster. If you try, you’re likely to end up making much worse decisions. Here’s how to improve the actual quality of your decisions instead of chasing hacks to speed them up.**
        - **When the product of your job is your decisions, you might find yourself wanting to be able to make more decisions more quickly so you can be more productive overall.**
        - **Chasing speed is a flawed approach. Because decisions—at least good ones—don’t come out of thin air. They’re supported by a lot of thinking.**

    II. **Beyond The Hurry Culture**
        - **Everyone is trying to work faster at all times, and they pressure everyone around them to work faster, too.**
        - **All of these things increase pressure in the work environment and repeatedly reinforce the “hurry up!” message. They make managers feel like they’re moving things along faster. That way if work isn’t getting done, it’s not their fault. But, DeMarco writes, they don’t lead to meaningful changes in behavior that make the whole organization more productive. Speeding up often results in poor decisions that create future problems.**
        - **The reason more pressure doesn’t mean better productivity is that the rate at which we think is fixed. We can’t force ourselves to start making faster decisions right now just because we’re faced with an unrealistic deadline. DeMarco writes, “*Think rate is fixed. No matter what you do, no matter how hard you try, you can’t pick up the pace of thinking.*”**

III. Elements of Effective Thinking

- **Understand Deeply. Don't face complex issues head-on; first understand simple ideas deeply. Clear the clutter and expose what is really important. Be brutally honest about what you know and don't know. Then see what's missing, identify the gaps, and fill them in. Let go of bias, prejudice, and preconceived notions. There are degrees to understanding (it's not just a yes-or-no proposition) and you can always heighten yours. Rock-solid understanding is the foundation for success.**
- **Make Mistakes. Fail to succeed. Intentionally get it wrong to inevitably get it even more right. Mistakes are great teachers — they highlight unforeseen opportunities and holes in your understanding. They also show you which way to turn next, and they ignite your imagination.**
- **Raise Questions. Constantly create questions to clarify and extend your understanding. What's the real question? Working on the wrong questions can waste a lifetime. Ideas are in the air — the right questions will bring them out and help you see connections that otherwise would have been invisible.**
- **Follow the Flow of Ideas. Look back to see where ideas came from and then look ahead to discover where those ideas may lead. A new idea is a beginning, not an end. Ideas are rare— milk them. Following the consequences of small ideas can result in big payoffs. These are the four basic building blocks for effective thinking. The fifth is Change.**
- **Change. The unchanging element is change— by mastering the first four elements, you can change the way you think and learn. You can always improve, grow, and extract more out of your education, yourself, and the way you live your life. Change is the universal constant that allows you to get the most out of living and learning.**

6. **Step 6-Collect As Many mental models as Possible from diverse domains and academic disciplines That I think is suitable for my situation or Information provided by the Text, Book, Speech etc. Research a broad range of industries to identify mental models that can be integrated and Most Suitable into area of work or focus. In identifying the Great Mental Models we have to look for elementary principles, the ideas from multiple disciplines that form a time tested foundation, these mental models would be from Elementary Mental Models to most Advanced Mental Models. It may seem counterintuitive, to work on developing knowledge that is available to everyone, but the universe works in the same way no matter where you are in it or how you think the universe should be working. What you need is to understand the principles, so that when the details change you are still able to identify what is really going on. Listen and Follow Every Book on Each Mental models.**
   A. **General Mental Models For Thinking.**
      I. **The Great Mental Models Volume 1 By Fs Blog.**
         - **The Map is Not The Territory.**
         - **Circle of Competence.**
         - **The first Principles Thinking.**
         - **Though Experiment.**
         - **Second Order Thinking.**
         - **Probabilistic Thinking.**
         - **Inversion.**
         - **Occam's Razor.**
         - **Hanlon's Razor.**
         - **Supporting Ideas.**
         - **Falsifiability.**
         - **Necessity and Sufficiency.**
         - **Causation vs Correlation.**

      II. **The Great Mental Models Volume 2 By Fs Blog.**
         - **Physics.**
            - **Relativity.**
            - **Reciprocity.**
            - **Thermodynamics.**
            - **Inertia.**

- **Friction and Viscosity.**
- **Velocity**
- **Leverage.**

- **Chemistry.**
  - **Activation Energy.**
  - **Catalysts.**
  - **Alloying,**

- **Biology.**
  - **Evolution Part One: Natural Selection and Extinction.**
  - **Evolution Part two: Adaptation Rate and The Red Queen Effect.**
  - **Supporting Idea: Competition.**
  - **Ecosystem.**
  - **Niche.**
  - **Self Preservation.**
  - **Replication.**
  - **Cooperation.**
  - **Supporting Idea: Dunbar's Number.**
  - **Hierarchical Organisation.**
  - **Incentives.**
  - **Tendency to Minimize energy Output.**

III. The Great Mental Models Volume 3 By Fs Blog.

- **Systems.**
  - **Feedback Loops.**
  - **Equilibrium.**
  - **Bottlenecks.**
  - **Scale.**
  - **Margin of Safety.**
  - **Churn.**
  - **Algorithms.**
  - **Supporting Idea: Complex Adaptive Systems.**
  - **Critical mass.**

- **Emergence.**
- **Supporting Idea: Chaos Dynamics.**
- **Irreducibility.**
- **Law of Diminishing Returns.**

- **Mathematics.**
  - **Supporting Idea: Distribution.**
  - **Compounding.**
  - **Supporting Idea; Network Effect.**
  - **Sampling.**
  - **Randomness.**
  - **Supporting idea: Pareto Principle.**
  - **Regression to the mean.**
  - **Multiplying by ZERO.**
  - **Equivalence.**
  - **Supporting idea: order of Magnitude.**
  - **Surface Area.**
  - **Global and local Maxima.**

IV. The Great Mental Models By Tommy Tedford.

- **First Principles Mental model.**
- **Classical Condition.**
- **Cognitive Biases.**
- **Circle Of Competence Mental Model.**
- **Eisenhower Matrix.**

V. 100 Mental Models- Be Rational by Wisdom Theory.

- **Philosophy.**
  - **Meaning Of Life.**
  - **Stoicism.**
  - **Cave of plato.**
  - **Golden Rule.**
  - **Constructivism.**

- **Maths.**
  - **Algebra.**
  - **Permutations and combinations.**
  - **Algorithms.**
  - **Scale.**
  - **Compound interest.**
  - **Inflection point.**

- **Physics.**
  - **Scientific Method.**
  - **Breakpoint.**
  - **Critical mass.**
  - **Reciprocity.**
  - **Velocity.**
  - **Relativity.**
  - **Leverage.**
  - **Newton’s Laws of Motion.**
  - **Chaos Theory.**
  - **Complex Adaptive Systems.**
  - **Activation Energy.**
  - **Laws of Thermodynamics.**
  - **Heisenberg Uncertainty Principle.**

- **Statistics.**
  - **Probabilistic thinking.**
  - **Bayes Theorem.**
  - **Power Law.**
  - **Regression to the Mean.**
  - **Game Theory.**
  - **Correlation and Causation.**
  - **Standard Deviation.**
  - **Law of large numbers.**
  - **Inversion.**
  - **Fragility / Robustness / Antifragility.**
  - **Black Swan.**

- **Engineering.**
  - **Redundancy: Margin of safety.**
  - **Backup system model.**
  - **Breakpoint.**
  - **Quality control.**
  - **Feedback loops.**

- **Chemistry.**
  - **Atoms, Molecules, and Ions.**
  - **The Chemical Bond.**
  - **Molecular Shape and Geometry.**
  - **The Kinetic Theory.**
  - **The Chemical Reaction.**
  - **Autocatalyst.**

- **Biology.**
  - **Modern Darwinian Synthesis.**
  - **Incentives.**
  - **Scarcity.**
  - **Cooperation.**
  - **Adaptation.**
  - **Replication.**
  - **Hierarchical and Other Organizing Instincts.**
  - **Self-Preservation Instincts.**
  - **Resilience.**
  - **The Red Queen Effect.**
  - **Ecosystems.**
  - **Niches.**

- **Psychology.**
  - **Reward and Punishment Superresponse Tendency.**
  - **Liking/Loving Tendency.**
  - **Disliking/Hating Tendency.**
  - **Doubt/Avoidance Tendency.**
  - **Inconsistency-Avoidance Tendency.**
  - **Curiosity Tendency.**
  - **Kantian Fairness Tendency.**
  - **Envy/Jealous tendency.**
  - **Reciprocation Tendency.**
  - **Influence-from-Mere-Association Tendency.**
  - **Simple, Pain-Avoiding Psychological Denial.**
  - **Excessive Self-Regard Tendency.**
  - **Overoptimism Tendency.**
  - **Deprival-Superreaction Tendency.**
  - **Social-Proof Tendency.**
  - **Contrast-Misreaction Tendency.**
  - **Stress-Influence Tendency.**
  - **Availability-Misweighing Tendency.**
  - **Use-It-or-Lose-It Tendency.**
  - **Drug Misinfluence Tendency.**
  - **Senescence-Misinfluence Tendency.**
  - **Authority-Misinfluence Tendency.**
  - **Twaddle Tendency.**
  - **Reason-Respecting Tendency.**
  - **Lollapalooza Tendency.**

- **Economics.**
  - **Double Entry Accounting.**
  - **Opportunity Costs.**
  - **Circle of Competence.**
  - **Pareto Principle.**
  - **Creative Destruction.**
  - **Supply and Demand.**
  - **Moats.**
  - **Network Effects.**
  - **Switching Costs.**
  - **Specialization.**
  - **Tragedy of the Commons.**
  - **Mr. Market.**
  - **Principal-agent problem.**
  - **Skin in the game.**

- **History.**
  - **The importance of geography.**
  - **Inclusive economic and political institutions.**
  - **Extremely intense ideology.**
  - **Historic recurrence.**

VI. Mental Models, Investing and you volume 1 by Anshul Khare.
VII. Mental Models- 349 Models Explained to Carry Around in Your Head.
VIII. MENTAL MODELS Aligning Design Strategy with Human Behavior by INDI YOUNG.
IX. Seeking Wisdom_ From Darwin to Munger.
X. Thinking, Fast and Slow.
XI. Investing_ The Last Liberal Art.
XII. Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.
XIII. General Mental Models.
XIV. The sense of style _ the thinking person's guide to writing in the 21st century.
XV. Extreme Ownership.
XVI. Good Strategy and Bad Strategy.
XVII. The Complete Art of War.
XVIII. The Art of War_ Complete Text and Commentaries.

B. Accounting Mental Models.

I. **ACCA F1 - ACCOUNTANT IN BUSINESS.**
II. **ACCA F2 - Management Accounting.**
III. **ACCA F3 Financial accounting.**
IV. **ACCA F4 - Corp and Business Law.**
V. **ACCA F5-Performance_Management.**
VI. **ACCA F6 UK TAXATION.**
VII. **ACCA F7 INT Study Text Financial Reporting.**
VIII. **ACCA F8 UK Study Text Audit and Assurance.**
IX. **ACCA f9-FINANCIAL MANAGEMENT.**
X. **ACCA P1_ Governance, Risk and Ethics.**
XI. **ACCA P2 - Corporate Reporting.**
XII. **ACCA P3 Business Analysis.**
XIII. **ACCA P4 - Advanced Financial Management.**
XIV. **ACCA P5 - Advanced Performance Management.**
XV. **ACCA P6 Advanced Taxation.**
XVI. **ACCA P7 - Advanced Audit and Assurance.**
XVII. **Wiley CPA Exam Review 2013, Auditing and Attestation.**
XVIII. **Wiley CPA Exam Review 2013, Business Environment and Concepts.**
XIX. **Wiley CPA Exam Review 2013, Financial Accounting and Reporting.**
XX. **Wiley CPA Examination Review 2012-2013 Volume 2 _ Problems and Solutions.**

C. CFA Mental Model

I. CFA Program Curriculum Level 1 Volumes 1-6.

II. CFA Program Curriculum Level 2 Volumes 1-6.

III. CFA Program Curriculum Level 3 Volumes 1-6.

- **Ethics.**
- **Economics**
- **Financial Reporting and Analysis.**
- **Corporate Finance and Portfolio Management/**
- **Equity.**
- **Equity and Fixed Income.**
- **Derivatives and Alternative Investments.**
- **Behaviour Finance and Individual investors and institutional Investors.**
- **Application of Economic analysis and asset allocation.**
- **Risk Management.**
- **Trading and rebalancing, performance evaluation.**

D. Logic and Critical Thinking Mental Method.

I. **Listen, Use and Apply Socratic Logic By Peter Kreeft For Thinking.**
II. **Listen, Use and Apply Introduction of Logic By Patrick Hurley for Thinking.**
III. **Listen, Use and Apply New Introduction to Modal Logic By G.e Hughes For Thinking.**
IV. **Listen, Use and Apply Argumentation and Debate By Austin Freeley for Thinking.**
V. **Listen, Use and Apply Attacking Faulty Reasoning by Edward Damer for Thinking.**
VI. **Listen, Use and Apply Bad Arguments By Robert Arp For Thinking.**
VII. **Listen, Use and Apply Everything's An Argument By Andrea Lunsford For Thinking.**
VIII. **Listen, Use and Apply Logic and Language By J. Van Benthem For Thinking.**
IX. **Listen, Use and Apply Introduction to Logic and Critical Thinking By Merrilee Salmon For Thinking.**
X. **Listen, Use and Apply Critical Thinking Consider the Verdict by Bruce Waller For Thinking.**
XI. **Listen, Use and Apply Critical Thinking by Simon Bradley For Thinking.**
XII. **Listen, Use and Apply Critical Thinking Skills, Probelm solving and Academic and Occupational Competence by Lowell Hedges For Thinking.**
XIII. **Listen, Use and Apply Critical Thinking and Creativity by Joe Lau For Thinking.**
XIV. **Listen, Use and Apply Mastermind, How to Think Like Sherlock Holmes For Thinking.**
XV. **Listen, Use and Apply Learning To Think Like Lawyer By Elizabeth Mertz For Thinking.**
XVI. **Listen, Use and Apply The art of Deception by Nicolas Capaldi For Thinking.**
XVII. **Listen, Use and Apply The Art of Thinking Clearly by Rolf Dobelli For Thinking.**

XVIII.Listen, Use and Apply The Art of Thinking in System by Steven Schuster for Thinking.

XIX.Listen, Use and Apply Critical Thinking, Reading and Writing By Sdylvan Barn For Thinking.

XX.Listen, Use and Apply Understanding Argument By Walter Sinnot Armstrong For Thinking.

XXI.CRITICAL THINKING_ Consider the Verdict

XXII.Listen, Use and Apply Logically Falacious By Bo Bennet For Thinking.

XXIII.Listen, Use and Apply Meaning and Argument by Ernest Lepore For Thinking.

XXIV.Listen, Use and Apply Common Fallacy by Philip Ward For Thinking.

XXV.Listen, Use and Apply Modal Logic by Brian Chellas For Thinking.

- **Use Socratic Logic and Introduction to Logic for Thinking.**
- **Basic Concepts and Terms and Words.**
- **Language and definition.**
- **Informal Fallacies.**
- **Sentences, proposition, judgements.**
- **Immediate inference.**
- **Conversion.**
- **Observion.**
- **Contraposition.**
- **Contradition.**
- **Burden of Proof.**
- **Syntax.**
- **Categorical Propositions.**
- **Categorical Syllogism.**
- **Propositional Logic.**
- **Natural Deduction in Propositional Logic.**
- **Predicate Logic.**
- **Analogy and Legal and Moral Reasoning.**
- **Causality and Mill's Reasoning.**
- **Probability.**
- **Statistical Reasoning.**
- **Hypothetical Scientific Reasoning.**

- **Science and Superstition.**

E. Mathematical Mental Model.

I. **Listen, Use and Apply How Not To Be Wrong, Mathematical Thinking by Jordan Ellenberg For Thinking.**
II. **Listen, Use and Apply Advanced Engineering Mathematics By Erwin Kreyszig For Thinking.**
III. **Listen, Use and Apply Basic Mathematics By Tussy For Thinking.**
IV. **Listen, Use and Apply Calculus By Anton BAivens For Thinking.**
V. **Listen, Use and Apply Calculus 1-2 By Patrick MJT For Thinking.**
VI. **Listen, Use and Apply Fundamental of Mathematics Differential Calculus by Sanjay Mishra For Thinking.**
VII. **Listen, Use and Apply Handbook of Mathematical by Milton Abramowitz For Thinking.**
VIII. **Listen, Use and Apply Higher Engineering Mathematic by John Bird For Thinking.**
IX. **Listen, Use and Apply Mathematics For Economics and Business by Ian Jacques For Thinking.**

F. Thinking Like Mental Tools.

I. **How to Think Like a Mathematician.**
II. **How to Think Like Einstein_ Simple Ways to Break the Rules and Discover Your Hidden Genius.**
III. **How to Think Like Leonardo da Vinci.**
IV. **Think Like a Futurist_ Know What Changes, What Doesn't, and What's Next.**
V. **Think Like an Engineer_ Use systematic thinking to solve everyday challenges & unlock the inherent values in them.**
VI. **Think Like an Entrepreneur, Act Like a CEO.**
VII. **How Successful People Think_ Change Your Thinking, Change Your Life.**
VIII. **How Professors Think.**
IX. **Learning To Think Like Lawyer.**
X. **Mastermind_ How to Think Like Sherlock Holmes.**
XI. **How to Think Like Scientist.**
XII. **How Doctors Think.**
XIII. **How to Think Like Bill Gates.**
XIV. **How to Think Like Sherlock.**
XV. **How to think like Leonardo Da Vinci _ seven steps to genius every day.**
XVI. **Think Like A Lawyer.**
XVII. **Act Like a Leader, Think Like a Leader.**
XVIII. **How not to be wrong. The power of mathematical thinking .**
XIX.

G. Thinking System Mental Tools.

I. **Deep Thinking_ What Mathematics Can Teach Us About the Mind.**
II. **Deep Thinking_ Where Machine Intelligence Ends and Human Creativity Begins.**
III. **Design Thinking Research_ Making Design Thinking Foundational.**
IV. **Design thinking_ integrating innovation, customer experience and brand value.**
V. **Design Thinking_ Understand – Improve – Apply.**
VI. **Super Thinking.**
VII. **Debugging by Thinking.**
VIII. **Scientific Thinking.**
IX. **Scientific-writing-thinking-in-words.**
X. **Strategic Thinking for Leaders, The Systems Thinking Approach.**
XI. **Strategic Thinking in Complex Problem Solving**
XII. **Strategic Thinking_ A Nine Step Approach to Strategy and Leadership for Managers and Marketers.**
XIII. **The Art Of Thinking In Systems_ Improve Your Logic, Think More Critically, And Use Proven Systems To Solve Your Problems - Strategic.**
XIV. **Think Strategically.**
XV. **Thinking Like Lawyer.**
XVI. **Thinking strategically _ the competitive edge in business, politics, and everyday life.**
XVII. **Thinking in Systems.**

H. Risk Management Mental Tools.

I. The-essentials-of-risk-management.

II. COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.

III. Advanced Financial Risk Management_ Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management.

IV. Compliance-Risk-Management-Applying-the-COSO-ERM-Framework.

V. COSO Enterprise Risk Management_ Establishing Effective Governance, Risk, and Compliance Processes.

VI. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VII. Credit Risk Management_ Basic Concepts_ financial risk components, rating analysis, models, economic and regulatory capital.

VIII. Enterprise Risk Management-Tools and Techniques for Implementation_Part II.

IX. Enterprise_risk_management.

X. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XI. Financial Risk Management_ A Practitioner's Guide to Managing Market and Credit Risk.

XII. Financial Risk Management_ Applications in Market, Credit, Asset and Liability.

XIII. Fundamentals of Enterprise Risk Management_ How Top Companies Assess Risk, Manage Exposure, and Seize.

XIV. Fundamentals of Risk Management_ Understanding, Evaluating and Implementing Effective Risk Management.

XV. Fundamentals of Risk Management_ Understanding, evaluating and implementing effective risk management.

XVI. Implementing Enterprise Risk Management.

XVII. Managing Operational Risk_ Practical Strategies to Identify and Mitigate Operational Risk within Financial Institutions.

XVIII. Principles of Risk Management and Insurance.

XIX. Quantitative Financial Risk Management.

XX. CFA Risk Management.

XXI. Risk Management_ Concepts and Guidance.

XXII.Margin of Safety_ Risk-Averse Value Investing Strategies for the Thoughtful Investor.

XXIII.Value at Risk_ The New Benchmark for Managing Financial Risk.

XXIV.The Oxford Guide to Financial Modelling Applications for Capital Markets, Corporate Finance, Risk Management and Financial.

I. **Economic Mental Tool.**
    I. **Benjamin Graham_ The Intelligent Investor.**
    II. **Economics.**
    III. **Economics for Investment Decision Makers_ Micro, Macro, and International Economics.**
    IV. **Economics.**
    V. **Intermediate Microeconomics.**
    VI. **Microeconomics.**
    VII. **Microeconomic Analysis.**
    VIII. **Modern Macroeconomics.**
    IX. **Macroeconomics, 7th.**
    X. **Macroeconomics [9th Edition].**
    XI. **Macroeconomic theory_ a textbook on macroeconomic knowledge and analysis.**
    XII. **Macroeconomic Theory_ A Dynamic General Equilibrium Approach.**
    XIII. **Foundations of modern macroeconomics exercise and solutions manual.**

J. **Pareto Principle**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

K. Statistics Mental Tools.

I. **Applied Statistics and Probability for Engineers.**

II. **Basic Business Statistics.**

L. Biblical Thinking Mental Tool.

I. **Think Biblically!_ Recovering a Christian Worldview.**

M. Econometric Mental Tools,

I. **Econometrics**

II. **Econometric Analysis.**

III. **Palgrave Handbook of Econometrics_ Volume 2_ Applied Econometrics.**

IV. **Introductory econometrics. A modern approach.**

V. **Introductory Econometrics.**

VI. **Introductory Econometrics_ A Modern Approach.**

VII. **Handbook of Financial Econometrics and Statistics.**

VIII. **Econometrics for Financial Applications.**

IX. **Econometrics For Dummies.**

X. **Econometric Analysis of Cross Section and Panel Data.**

XI. **Econometric Analysis.**

XII. **Basic econometrics._ Student solutions manual for use with Basic econometrics.**

XIII. **Basic Econometrics.**

N. Investment Mental Model.

I. **Benjamin Graham_ The Intelligent Investor.**
II. **Common Sense Investing.**
III. **Common Sense on Mutual Funds.**
IV. **Complete_guide_to_money.**
V. **Derivatives, options by Hull.**
VI. **The Basics of Finance_ An Introduction to Financial Markets, Business Finance, and Portfolio Management.**
VII. **The Financial Peace Planner_ A Step-By-Step Guide to Restoring Your Family's Financial Health.**
VIII. **The Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Return.**
IX. **he Little Book of Common Sense Investing_ The Only Way to Guarantee Your Fair Share of Stock Market Returns.**
X. **The Total Money Makeover_ A Proven Plan for Financial Fitness.**
XI. **The-Richest-Man-In-Babylon.**
XII. **Thou Shall Prosper_ Ten Commandments for Making Money.**
XIII. **Valuation Techniques_ Discounted Cash Flow, Earnings Quality, Measures of Value Added.**
XIV. **Warren Buffett and the Interpretation of Financial Statements.**
XV. **Why Didn't They Teach Me This in School__ 99 Personal Money Management Principles to Live.**
XVI. **The Little Book of Valuation_ How to Value a Company, Pick a Stock and Profit.**
XVII. **The Intelligent Investor.**
XVIII. **The Attacker's Advantage_ Turning Uncertainty into Breakthrough Opportunities.**
XIX. **Competitive advantage_ creating and sustaining superior performance _ with a new introduction .**
XX. **Competitive Advantage of Nations.**
XXI. **Fundamental_&_Technical Analysis_Manual.**

O. Corporate Finance.
    I. CORPORATE FINANCE An Introduction.

P. Biology.
    I. Developmental Biology.
    II. Encyclopedia of Biology.
    III. Encyclopedia of evolutionary biology.
    IV. Encyclopedia of Molecular Cell Biology and Molecular Medicine.
    V. Human Embryology and Developmental Biology.
    VI. Introduction to the Biology of Marine Life
    VII. The Encyclopedia Of Molecular Biology.

Q. Physics.
    I. College Physics - Physics and Astronomy.
    II. Encyclopedia of applied physics.
    III. Fundamentals of Physics Textbook.
    IV. Modern classical physics_ optics, fluids, plasmas, elasticity, relativity, and statistical physics.
    V. Physics for Scientists & Engineers & Modern Physics.

R. Chemistry.
    I. Physical_chemistry.
    II. Encyclopedia of Analytical Chemistry_ Applications, Theory, and Instrumentation.
    III. March's Advanced Organic Chemistry_ Reactions, Mechanisms, and Structure.
    IV. Organic Chemistry.
    V. Ullmann's Encyclopedia of Industrial.

S. Engineering.
    I. Encyclopedia of Automotive Engineering.
    II. Encyclopedia of Information Science and Technology.
    III. Encyclopedia of RF and Microwave Engineering.
    IV. Encyclopedia-Environmental-Science.
    V. Wiley Encyclopedia of Biomedical Engineering, 6-Volume Set.
    VI. Encyclopedia of Aerospace Engineering.

T. Psychology.
    I. Handbook of Psychology Volume 1-12.
    II. Encyclopedia of Psychology.

U. Philosophy.
    I. Routledge Encyclopedia of Philosophy.
    II. Stanford Encyclopedia of Philosophy.

V. Strategem.
    I. Treasons, Strategems and Spoils.
    II. 36 Strategens.
    III. The 36 Strategies of the Chinese: Can It Be a Eurasian Strategic Model in a Global Context?
    IV. Stratagem, deception and surprise in war.
    V. THE 36 CHINESE STRATEGIES APPLIED TO NEGOTIATION.
    VI. Stratagem and spoils.
    VII. STRATAGEM Deception and Surprise in War.
    VIII. Secrecy and stratagem understanding Chinese strategic culture.
    IX. Chinese Stratagem and Chinese Business Negotiating Behaviour: An Introduction.
    X. The Thirty-Six Strategies of Ancient China.

7. **Step 7-*Getting familiar*: At this starting point, users decide if they can use an existing mental model (maybe one used for another similar product) or if they need to start from scratch. The existing mental model may be void of useful knowledge or worse, contain the wrong knowledge. The core components missing at this stage include an understanding of the language the product uses and the actionable steps needed to complete core tasks.**
8. **Step 8-Apply simple criteria to which mental models you use. When selecting mental models to include into your own latticework, consider whether they support you to better understand yourself and/or the world around you, so you might better effective and impactful action. Also Mental models do two things: they help you assess how things work and they help you make better decisions. Ask some Questions:**
    I. **How long has this model been around? As a general rule, mental models which have been around for a long time (such as Occam's razor) will have been subjected to a great deal of scrutiny. Time is an excellent curator, trimming away inefficient ideas. A mental model which is new may not be particularly refined or versatile. Many of our mental models originate from Ancient Greece and Rome, meaning they have to be functional to have survived this long.**
    II. **Is it a representation of reality? In other words, does it reflect the real world? Or is it based on abstractions?**
    III. **Does this model apply to multiple areas? The more elastic a model is, the more valuable it is to learn about. (Of course, be careful not to apply the model where it doesn't belong. Mind Feynman: "You must not fool yourself, and you're the easiest person to fool.")**
    IV. **How did this model originate? Many mental models arise from scientific or mathematical concepts. The more fundamental the domain, the more likely the model is to be true and lasting.**
    V. **Is it based on first principles? A first principle is a foundational concept which cannot be deduced from any other concept and must be known.**
    VI. **Does it require infinite regress? Infinite regress refers to something which is justified by principles, which themselves require justification by other principles. A model based on infinite regress is likely to**

required extensive knowledge of a particular topic, and have minimal real-world application.

9. **Step 9- *Becoming proficient*: Users begin to understand the language of the situation or text, especially if this language uses technical or unfamiliar vernacular. Understanding terminology and use of product language is one of the first building blocks that form the foundation of the model. This is also when users start to understand the step-by-step procedures required to perform basic operations to get some desired outcome. Here, they are usually learning the bread-and-butter operations of the product so they can receive enough value to motivate them to keep using it. Later, they will be able to build on this knowledge.**
10. **Step 10- Make connections between mental models. We need to know full context and not isolated facts. Rather than holding siloed mental models in your mind, consider how they interact, connect and complement one another.**
11. **Step 11-Think, what light the mental model can bring on the situation, idea, text , speech etc. Do I see the situation, idea, text, speech etc, in the new way? What new way can I see the situation? Does This Makes easier to make a decision in my life?**
12. **Step 12- Think very carefully, if each chosen Mental model applicable to situation, idea, text, speech etc.**
13. **Step 13-Use the Chosen Mental Models tool. The canvas, below, will help you to identify high-value areas where new mental models can make the biggest impact on your work and life. It also provides a simple framework to begin to embed using your chosen models.**
14. **Step 14-*Mastering*: Users build on the core step-by-step tasks they already know, expanding their knowledge to more complex or niche capabilities. If they make it this far they most likely have an accurate understanding of most or all of the language the product uses.**
15. **Step 15-Regularly reassess their priorities without fear of changing them. They don't fall prey to inertia.**
16. **Step 16-Be biased toward taking action—not lazily deferring. If they encounter a mental model they value, they make sure they use it.**
17. **Step 17-Be always looking to prove yourselves wrong. Ego should not get in the way of mental models.**

18. **Step 18-Accepting that all models are wrong in certain instances is not a license to ignore the facts. As a society, we should search for better answers, look for evidence, and strive to increase the accuracy of our knowledge.**
    I. **That's not to say all lenses (or models) apply to all problems. They don't. And it's not to say that having more lenses (or models) will be a advantage in all problems. It won't. This is why learning and applying the Great Mental Models is a process that takes some work. But the truth is, most problems are multidimensional, and thus having more lenses often offers significant help with the problems we are facing.**
    II. **The more you use them, the more you will be able to build the knowledge of indicators that can trigger the use of the most appropriate model. Using and failing, as long as you acknowledge, reflect, and learn from it, is also how you build your repertoire. You need to be deliberate about choosing the models you will use in a situation. As you use them, a great practice is to record and reflect. That way you can get better at both choosing models and applying them. Take the time to notice how you applied them, what the process was like, and what the results were. Over time you will develop your knowledge of which situations are best tackled through which models. Don't give up on a model if it doesn't help you right away. Learn more about it, and try to figure out exactly why it didn't work. It may be that you have to improve your understanding. Or there were aspects of the situation that you did not consider. Or that your focus was on the wrong variable.**

19. **Step 19-After all Analysis, decide what models are the most suitable after all to apply.**
20. **Step 20-Apply The Mental Model in Real Life or Reality, and let the world do the work for You.**

Step 144-Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**

Step 145-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding

Step 146 Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**
2. **Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
    - **First, he would learn everything he could about it and prepare physically as best as possible.**
    - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
    - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
    - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
    - **Side note: visualization is great, but it's no substitute for preparation.**

Step 147-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

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IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

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VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

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example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 20: Deep Work and Performance

Step 148-Performance Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 18, before looking Performance.**
2. **Listen, Follow and Apply the following Books.**
   A. Managing Employee Performance and Reward_ Concepts, Practices, Strategies.
   B. Performance Management and Performance Measurement.
   C. PERFORMANCE MANAGEMENT Performance management key strategies and practical.
   D. PERFORMANCE MANAGEMENT Performance Management, A New Approach for Driving Business Results.
   E. Execution_ The Discipline of Getting Things Done.
   F. High Commitment High Performance_ How to Build A Resilient Organization for Sustained Advantage.
   G. Key Performance Indicators (KPI) _ Developing, Implementing, and Using Winning KPIs.
   H. Key Performance Indicators (KPI) The 75 measures every manager needs to know.
   I. Key performance indicators for government and non profit agencies _ implementing winning KPIs.
   J. Performance Management and Performance Measurement.
   K. The Little Book of Big Management Theories_ ... and how to use them.

Step 149- Tiny Gains. Massive Results.

When we want to improve ourselves, we often pursue dramatic changes with little success. A better idea is to go for small, incremental improvements that add up over time.

Self-motivated, self-starting individuals are incredibly motivated to find their weaknesses. It's not far-fetched to say that some of us actually seek to make ourselves perfect — rational, calculating beings making the right type of decisions at just the right times. But we've learned from Star Trek; we don't look to eliminate emotion either and turn ourselves into Mr. Spock. We want *just the right amount* of emotion in our lives.

People often overestimate what they can accomplish in one year. But they greatly underestimate what they could accomplish in five years.

— Peter drucker

If we're night owls, we seek to become early risers. (Ben Franklin did it!). If we're procrastinators, we look to become doers. If we're always late to meetings, we look to be early to meetings. We want to eliminate our weaknesses and become a little More.

This is, of course, a laudable goal. But the self-starters among us have probably all run into the same problem: We don't actually follow through on the things we know will make us better. We don't eat the broccoli. We get a little too robotic. We get up at 8:30 when we said we'd do 5:30 from here on out. We leave that essay until the last second even though that was never going to happen again. We're five minutes late. We don't become lore at all, and the failure to get there makes us feel like less.

The culprit is the thought that any important change happens quickly. It doesn't matter whether you're trying to get up early or pick up and implement the *Psychology of Human Misjudgment*. Anything important happens slowly.

From Potential to Useful

And why should it be otherwise? If you were to truly understand, in-depth, and apply the *Psychology of Human Misjudgment* to your dealings, you'd be *way* far out ahead of your peers and your former self. The advantage of understanding human nature is incredible. But it takes deep, repeated study and a long gestation period to get there. It takes applying the ideas to the world, feeling them out, forgetting them, re-doubling yourself, and trying again. Not giving up when you forget or fail. It is through the process of *refinement* that one learns new habits and ideas.

The visual mental model I like for self-improvement is imagining something like a Lathe.

A *lathe*, for the non-engineer, is a tool that molds a piece of material into some shapely form. A machinist would use a lathe to take a hunk of metal and turn it into a usable engine part, for example. The lathe takes something with *potential* and shapes it into something *useful* by slowly refining it and shaving away the excess.

Compounding works in other areas besides money.

The way I think about it, if I can get 5% wiser and better every year, then I will be about twice as wise as I am now in less than 15 years. (Go ahead, grab your calculators.) In less than 30 years, my return will be 4x. This is how the non-gifted among us can surpass otherwise more intelligent people.

Tiny Improvements, Massive Results

Tiny improvements add up to *massive* differences.

Compounding works in other areas besides money. And we want to compound worldly wisdom.

These little mental tricks like the Lathe and the idea of 5% yearly improvement are just ways to remind myself that I'm not going to wake up wiser/nicer/healthier/smarter tomorrow morning or the morning after. And just as importantly, if I backslide on a goal I've set or I forget something I thought I'd learned well, that it's really not the end of the world. I don't need to give up and call it hopeless. All I have to do is figure out where I slipped, re-double my efforts, and go after it again. All I need is 5% a year to become 4x better in my adult lifetime.

The truth is that whatever bad habits you have or whatever things you're struggling to learn, there's probably a good reason. Your biology and your experiences to date have set you in stone to a certain extent, and the older you are, the more likely that is to be true. The chains of habit are too light to be felt until they are too heavy to be broken. Billion-dollar industries have been built on convincing you that it's *easy* to make big changes or to get a lot wiser and better. But it honestly isn't. It's hard work.

Yet any study of great individuals reveals that the work is worth doing.

So just imagine if you could make slightly <u>better decisions</u> every year. Whether it's 5% better consideration of *all* of your decisions, or making 5% of your decisions differently, or some permutation thereof, it doesn't really matter. Every year you'll look back at some part of your old self and wonder how you could've been so dumb. And one day, in less than 30 years, you'll look back and see your old self as almost unrecognizably stupid.

What more could you ask for?

Step 150-The Ultimate Deliberate Practice Guide: How to Be the Best

Everything You Need to Know to Improve Your Performance at Anything—For Beginners and Experts

Deliberate practice is the best technique for achieving expert performance in every field—including writing, teaching, sports, programming, music, medicine, therapy, chess, and business. But there's much more to deliberate practice than 10,000 hours. Read this to learn how to accelerate your learning, overcome the "OK" plateau, turn experience into expertise, and enhance your focus.

What is deliberate practice?

"*Engaged in the creative process we feel more alive than ever, because we are making something and not merely consuming, masters of the small reality we create. In doing this work, we are in fact creating ourselves.*" —Robert Greene, *Mastery*

Deliberate practice is what turns amateurs into professionals. Across every field, deliberate practice is what creates top performers and what they use to stay at the top of their game. It's absolutely essential for expert performance.

As a general concept, "practice" means preparing. It's the act of repeatedly performing certain activities with the intention of improving a specific associated skill. We rehearse what to do in low-pressure situations so we'll be better when we use a skill in situations where something is actually at stake, such as in a competition or in the workplace. Although this definition may seem obvious, it's crucial to distinguish between doing something and practicing it, because they're not always synonymous.

The key distinction between doing and practicing is that we're only practicing something when we do it in a way that makes us better at it—or at least with that intention.

Deliberate practice means practicing with a clear awareness of the specific components of a skill we're aiming to improve and exactly how to improve them. Unlike regular practice, in which we work on a skill by repeating it again and again until it becomes almost mindless, deliberate practice is a laser-focused activity. It requires us to pay unwavering attention to what we're doing at any given moment and whether it's an improvement or not.

Geoff Colvin summarizes deliberate practice as such in *Talent Is Overrated*:

Deliberate practice is characterized by several elements, each worth examining. It is activity designed specifically to improve performance, often with a teacher's help; it can be repeated a lot; feedback on results is continuously available; it's highly demanding mentally, whether the activity is purely intellectual, such as chess or business-related activities, or heavily physical, such as sports; and it isn't much fun.

The extraordinary power of deliberate practice is that it aims at constant progress. Practitioners are not content with repeating a skill at the same level. They have metrics for measuring their performance. And they aspire to see those metrics get continuously better.

While engaging in deliberate practice, we are always looking for errors or areas of weakness. Once we identify one, we establish a plan for improving it. If one approach doesn't work, we keep trying new ones until something does.

Using deliberate practice, we can overcome many limitations that we might view as fixed. We can go further than we might even think possible when we begin. Deliberate practice creates new physical and mental capabilities—it doesn't just leverage existing ones.

The more we engage in deliberate practice, the greater our capabilities become. Our minds and bodies are far more malleable than we usually realize.

Deliberate practice is a universal technique, and you can employ it for whatever you're trying to be the best (or just get a little bit better) at. It's easiest to apply to competitive fields with clear measurements and standards, including music, dance, football/soccer, cricket, hockey, basketball, golf, horse riding, swimming, and chess.

But deliberate practice is also invaluable for improving performance in fields such as teaching, nursing, surgery, therapy, programming, trading, and investing. It can even accelerate your progress in widely applicable skills such as writing, decision-making, leadership, studying, and spoken communication.

The key in any area is to identify objective standards for performance, study top performers, and then design practice activities reflecting what they do. Recent decades have seen dramatic leaps in what people are capable of doing in many fields. The explanation for this is that we're getting better at understanding and applying the principles of deliberate practice. As a field advances, people can learn from the best of what those who came before them figured out. The result is that now average high-schoolers achieve athletic feats and children advance to levels of musical prowess that would have seemed unthinkable a century earlier. And there's little evidence to suggest we've reached the limits of our physical or mental abilities in any area whatsoever.

Many of us spend a lot of time each week practicing different skills in our lives and work. But we don't automatically get better just because we repeat the same actions and

behaviors, even if we spend hours per day doing it. Research suggests that in areas such as medicine, people with many years of experience are often no better than novices—and may even be worse.

If we want to improve a skill, we need to know *what* exactly has to change and what might get us there. Otherwise, we plateau.

Some people will tell you it's only possible for anyone to improve at anything through deliberate practice, and any other sort of practice is a waste of time. This is an exaggeration. In reality, regular practice works for reinforcing and maintaining skills. It can also help us improve skills, particularly in the early stages of learning something. However, deliberate practice *is* the only way to:

1. Reach expert-level performance and enjoy competitive success
2. Overcome plateaus in our skill level
3. Improve at a skill much faster than through regular practice

If you're just doing something for fun and don't care about constantly improving at it, you don't need deliberate practice. For example, maybe you like to go for a walk around a local park in the afternoons to clear your head. Although you're practicing that walk each time you go, you probably don't care about increasing your walking speed day by day. It's enough that the repetitions further ingrain the habit and help maintain a certain level of physical fitness. Not everything in life is a competition! But if you want to keep getting better at something as fast as possible or reach an expert level, deliberate practice is vital.

Another important point to note is that deliberate practice isn't just a catchy name we came up with out of thin air. The term is largely attributed to Karl Anders Ericsson, one of the most influential figures of all time in the field of performance psychology. It's something many scientists have studied for decades. Everything we say here is supported by substantial academic research, particularly Ericsson's work.

We'll also debunk the numerous myths swirling around deliberate practice as a concept and reveal some of its significant limitations. So if you're looking for quick hacks for overnight success, you might want to look elsewhere. If you want a realistic roadmap for improving your performance, read on.

The elements of deliberate practice

"*Life is not always a matter of holding good cards, but sometimes, playing a poor hand well*." —Jack London

In this section, we'll break down the fundamental elements of deliberate practice and exactly how to incorporate them into your practice sessions. As Ericsson wrote in *Peak*, "*No matter what the field, the most effective approach to improving performance is to follow a single set of principles.*" We'll explain why each component is crucial and how they apply to different fields, and we'll cover multiple ways to implement them depending on your goals.

Deliberate practice is structured and methodical

"*Everyone has talent. What's rare is the courage to follow it to the dark places where it leads*." —Erica Jong

As humans, we're wired to want to do the easiest thing at all times in order to conserve energy. Put more simply, it's in our nature to be lazy. When we practice something a lot, we develop habits that become almost effortless to enact. While that's beneficial in many areas of our lives (and helps us survive), it's something we have to overcome in order to engage in deliberate practice. We can't expect constant improvement if we keep repeating the elements of a skill we already know how to do with ease. That's only enough if we're just having fun or want to reinforce our habits.

Deliberate practice is structured to improve specific elements of a skill through defined techniques. Practitioners focus above all on what they *can't* do. They seek out areas of weaknesses impacting their overall performance, then target those. At every stage, they set tailored, measurable goals in order to gauge whether their practice is effective at moving them forwards. Numbers are a deliberate practitioner's best friend.

If you want to reach an expert level of performance, you need to begin practice sessions with a plan in mind. You need to know what you're working on, why, and how you intend to improve it. You also need a way to tell if your improvement efforts aren't working and if you need to try a new tactic. Once you reach your goal for that particular component of the skill, it's time to identify a new area of weakness to work on next.

Having lots of little, realistic goals with a game plan for achieving them makes deliberate practice motivating. There's a sense of ongoing movement, yet the next step is always a realistic stretch. Day by day, the gains from deliberate practice may feel modest. But when we look back over a longer period of time, small bits of progress compound into gigantic leaps.

How to implement this: Take the skill you're aiming to improve and break it down into the smallest possible component parts. Make a plan for working through them in a logical order, beginning with the fundamentals, then building upon them. Decide which parts you'd like to master over the next month. Put your practice sessions in your calendar, then plan precisely which parts of the skill you're going to work on during each session.

Don't expect your plan to be perfect. You'll likely need to keep modifying it as you discover new elements or unexpected weaknesses. The most important thing is to always go into practice with a plan for what you're working on and how. Knowing what you're doing next is the best way to stay on track and avoid aimless time-wasting. That means seeking to keep figuring out what separates you from the next level of performance so you can concentrate on that.

Deliberate practice is challenging and uncomfortable

"*One must develop an instinct for what one can just barely achieve through one's greatest efforts.*" —Albert Einstein (attributed)

Imagine the world from the perspective of a baby learning to walk for the first time. It's not usually an easy process. They need to develop a lot of new skills and capabilities. They need to build enough muscular strength to stand upright without support. And they need to learn how to coordinate their limbs well enough to move around. Along the way, a baby needs to develop numerous sub-skills, such as how to grip supports to pull themselves up. It likely takes thousands of attempts to master walking—as well as numerous, falls, collisions, and other mishaps. We might not remember the process as adults, but a baby learning to walk needs to spend many hours challenging themselves and moving incrementally out of their comfort zone.

If we want to use deliberate practice, we could do with learning a thing or two from babies. Deliberate practice isn't necessarily fun while we're doing it. In fact, most of the time it's a process of repeated frustration and failure. We have to fall down a dozen times for every step we take. That's the whole point.

Seeing as deliberate practice requires us to keep targeting our weakest areas, it means spending time doing stuff we're not good at. In the moment, that can feel pretty miserable. But the quickest route to improvement involves stepping outside of our comfort zones.

The reason why people who have spent decades doing something are not necessarily better than newbies is that they're liable to get complacent and stop pushing themselves. We need to keep attempting to do things that feel out of reach at the moment.

In his studies of elite violinists, Ericsson asked them to rate different practice activities by how enjoyable they were and how much they contributed to improving performance. Invariably, there was an inverse correlation between the usefulness of an activity and its enjoyability. As Ericsson puts it in *Peak*:

The reason that most people don't possess these extraordinary physical capabilities isn't because they don't have the capacity for them, but rather because they're satisfied to live in the comfortable rut of homeostasis and never do the work that is required to get out of it. They live in the world of "good enough." The same thing is true for all the mental activities we engage in.

Elsewhere in the book, he writes "*This is a fundamental truth about any sort of practice: If you never push yourself beyond your comfort zone, you will never improve*." The interesting part is the more time you spend deliberately practicing, the more comfortable you'll become with being uncomfortable.

Daniel Coyle writes in *The Little Book of Talent*:

There is a place, right on the edge of your ability, where you learn best and fastest. It's called the sweet spot.…The underlying pattern is the same: Seek out ways to stretch yourself. Play on the edges of your competence. As Albert Einstein said, "One must develop an instinct for what one can just barely achieve through one's greatest efforts."

The key word is 'barely.'

A quick way to assess if you're doing deliberate practice or just regular rote practice is to ask yourself if you ever feel bored or zone out during practice sessions. If the answer is yes, you're probably not practicing deliberately.

Deliberate practice isn't boring. Frustrating, yes. Maddening, yes. Annoying, even. But never boring. As soon as practicing a skill gets comfortable, it's time to up the stakes. Challenging yourself is about more than trying to work harder—it means doing new things.

Pushing ourselves just beyond the limits of our abilities is uncomfortable, yet it's how we do our best—and indeed, it can be the source of some of our greatest moments of satisfaction. According to psychologist Mihaly Csikszentmihalyi, we often experience happiness as a result of entering a "flow" state, which occurs when we intensely focus on an activity that is challenging yet achievable. During moments of flow, we become so immersed in the activity that we lose any sense of time or of ourselves.

Noel Tichy, professor at the University of Michigan business school and the former chief of General Electric's famous management development center at Crotonville, puts the concept of practice into three zones: the comfort zone, the learning zone, and the panic zone.

Most of the time when we're practicing, we're really doing activities in our comfort zone. This doesn't help us improve because we can already do these activities easily. On the other hand, operating in the panic zone leaves us paralyzed, as the activities are too difficult and we don't know where to start. The only way to make progress is to operate in the learning zone, which are those activities that are just out of our reach.

Repetition inside the comfort zone does not equal deliberate practice. Deliberate practice requires that you operate in the learning zone and you repeat the activity a lot with feedback.

How to implement this: Each time you practice a component of a skill, aim to make it 10% harder than the level you find comfortable.

Once per month, have a practice session where you set yourself an incredibly ambitious stretch goal—not impossible, just well above your current level. Challenge yourself to see how close you can get to it. You might surprise yourself and find you perform far better than expected.

A common deliberate practice mistake is to plan a long practice session, then adjust the intensity of your practice to allow you to engage in a skill for the whole time. It's far more effective to engage in "sprints." Practice with the most intense focus you can manage for short periods of time, then take breaks. Seeing as you learn most when you stretch yourself beyond your current capabilities, shorter, more challenging practice periods are the way to go.

Deliberate practice requires rest and recovery time

"*There is a time for many words, and there is also a time for sleep.*" —Homer, *The Odyssey*

Seeing as deliberate practice is so challenging, it's impossible to do it all day long. Across fields, top practitioners rarely spend more than around three to five hours per day on deliberate practice, at the high end. They may work for more hours than that per day, but few can sustain the mental energy to engage in deliberate practice for eight hours a day. Additional hours often result in diminishing negative returns, meaning more practice makes performance worse because it results in burnout. Geoff Colvin writes:

The work is so great that it seems no one can sustain it for very long. A finding that is remarkably consistent across disciplines is that four or five hours a day seems to be the upper limit of deliberate practice, and this is frequently accomplished in sessions lasting no more than an hour to ninety minutes.

Ericsson's studies of elite violinists found they often took afternoon naps and slept an average of eight hours per night, considerably more than the average person. They were highly aware of the importance of sleep.

Even fitting in a single hour per day of deliberate practice is ample time to make substantial improvements, especially when we're consistent with committing to it over the long haul. Continuous investments in success compound. In the long run, commitment pays off.

Not only do most deliberate practitioners not spend all day at it, they also devote a lot of time to recuperation and recovery. They sleep as much as their bodies need. They nap if necessary. They take frequent, refreshing breaks. Most of us understand that rest is necessary after physical activity. But we can underestimate its importance after mental activity, too. Deliberate practice needs to be sustainable for the long term. How long a person keeps at a skill is often far more important than how many hours a day they spend on it.

When you're practicing deliberately, truly practice. When you're recuperating, truly relax. No one can spend every waking hour on deliberate practice.

Sleep is a vital part of deliberate practice. Being asleep doesn't mean you're not still improving your skill. We consolidate memories at night, moving them from short-term to long-term memory. And we can't exactly benefit from deliberate practice sessions if we don't remember what we learn each time. Not only that, but sleep deprivation also results in a plethora of negative cognitive effects that impact performance. If we skimp on sleep, we're likely to forget far more of what we learn during deliberate practice sessions, rendering them less useful.

When you're not engaging in deliberate practice, your brain is still at work. During deliberate practice, we're in focused mode. When we let our minds wander freely while at rest, we're in diffuse mode. Although that time feels less productive, it's when we form connections and mull over problems. Both modes of thinking are equally valuable, but it's the harmony between them that matters. We can't maintain the effort of the focused mode for long. At some point, we need to relax and slip into the diffuse mode. Learning a complex skill—a language, a musical instrument, chess, a mental model—requires both modes to work together. We master the details in focused mode, then comprehend how everything fits together in diffuse mode. It's about combining creativity with execution.

How to implement this: Make a list of activities you can engage in without too much conscious thought, letting yourself daydream while you do them. Common examples include going for a walk, washing the dishes, taking a shower, free-writing in a journal,

playing with a toy like Lego, driving a familiar route, gardening, cooking, listening to music, or just gazing out the window. When you feel yourself getting tired or hitting a roadblock during deliberate practice, don't keep pushing for too long. You want to be stretching yourself, not exhausting yourself. Instead, switch to one of those more relaxing activities for at least five minutes. You'll likely come back to practice with new connections or at last feeling refreshed.

Deliberate practice involves constant feedback and measurement

"*Deliberate practice is hard. It hurts. But it works. More of it equals better performance and tons of it equals great performance.*" —Geoff Colvin, *Talent Is Overrated*

Practicing something without knowing whether you are getting better is pointless. Yet that is what most of us do every day without thinking.

As we saw before, deliberate practice involves continuously stretching yourself to improve on weak areas of a skill. For that to work, practitioners require constant feedback about their current level of performance so they can identify what works for making it better.

What gets measured gets managed. To engage in deliberate practice, you need a way of measuring the most instructive metrics related to your performance. Seeing how those metrics change is the sole way to know if practice is working or not. Top performers across fields tend to spend time examining their past performance with care to identify areas for improvement. For example, a tennis player might film themselves playing a match so they can go through the footage frame by frame afterward. This provides valuable feedback, because they can figure out what might have held them back during weaker moments.

In fields such as sports and chess, measuring performance tends to be straightforward. In other areas such as business, measurements are harder to take, and there may be no established markers of success. The influence of random factors may also be stronger, making it less clear whether technique changes are actually having an influence or not. When you engage in deliberate practice, it's always important to be aware of how strongly correlated your practice and your performance are likely to be.

When measuring your performance, beware of vanity metrics. These are numbers that are easy to calculate and feel good to boost. But they don't actually move the needle towards the real improvements in performance that help you reach your goals. For example, let's say you're using deliberate practice to improve the skill of email marketing, as part of the wider goal of getting more customers for your business. The number of email subscribers is a vanity metric; the number of paying customers is a useful metric. It's completely possible to increase the former without a corresponding increase in the latter.

How to implement this: Identify the most significant metrics related to performance in your chosen skill and keep a record of them each time you practice. It's easy to fool yourself without a clear record of how you're doing. You might want to break the skill down into a few different parts to measure it, but make sure you're not fixating on vanity metrics.

Deliberate practice is most effective with the help of a coach or some kind of teacher

"*The best teacher is not the one who knows most but the one who is most capable of reducing knowledge to that simple compound of the obvious and wonderful.*" —H.L. Mencken (attributed)

Deliberate practice is most effective when conducted with some kind of coach who can give feedback, point out errors, suggest techniques for improvement, and provide vital motivation. Although mastering any skill requires a lot of time engaging in solitary practice, working with a coach at least some of the time is incredibly valuable. In some fields such as sports and music, it's common for a coach to be present all of the time. But most top performers benefit from a combination of coaching and solitary practice.

When we look at the lives of people who achieved great things, we often find that those who did so at a young age or in a shorter time than expected benefited from having fantastic teachers. For example, physicist Werner Heisenberg had the epiphany that led to the formulation of matrix mechanics a mere five years after commencing serious study of physics. But he no doubt benefited from the mentorship of Niels Bohr and Max Born, two of the foremost physicists at the time.

Even people at the most elite levels of performance across fields can benefit from specialist coaching. Engaging in something and teaching that thing are separate skills in themselves. The best practitioners are not always the best teachers because teaching is a skill in itself.

Ericsson explained that "*the best way to get past any barrier is to come at it from a different direction, which is one reason it is useful to work with a teacher or coach.*" We often make the same mistakes again and again because we simply don't realize what we're doing. Our performance falls into ruts and we can't figure out why we're running into the same problem yet again.

A coach can see your performance from the outside, without the influence of overconfidence and other biases. They can identify your blind spots. They can help you interpret key metrics and feedback.

Ericsson went on to say that "*even the most motivated and intelligent student will advance more quickly under the tutelage of someone who knows the best order in which to learn things, who understands and can demonstrate the proper way to perform various skills,*

who can provide useful feedback, and who can devise practice activities designed to overcome particular weaknesses." An experienced coach will have worked with many people on the same skill so they'll be able to advise on the best ways to structure practice. They'll know when you're just repeating what you find easy, and they'll be able to push you to the next level.

Teachers or coaches see what you miss and make you aware of where you're falling short. Geoff Colvin writes:

In some fields, especially intellectual ones such as the arts, sciences, and business, people may eventually become skilled enough to design their own practice. But anyone who thinks they've outgrown the benefits of a teacher's help should at least question that view. There's a reason why the world's best golfers still go to teachers.

But what if you don't have access to a coach? What if you don't have the means to hire one or one isn't available for your particular skill? In that case, it's still possible to apply the same principles that make a coach useful by yourself. Top performers across fields build the skill of metacognition, essentially making it possible for them to coach themselves. Colvin explains:

The best performers observe themselves closely. They are in effect able to step outside themselves, monitor what is happening in their own minds, and ask how it's going. Researchers call this metacognition—knowledge about your own knowledge, thinking about your own thinking. Top performers do this much more systematically than others do; it's an established part of their routine.

…A critical part of self-evaluation is deciding what caused those errors. Average performers believe their errors were caused by factors outside their control: my opponent got lucky; the task was too hard; I just don't have the natural ability for this. Top performers, by contrast, believe they are responsible for their errors. Note that this is not just a difference of personality or attitude. Recall that the best performers have set highly specific, technique-based goals and strategies for themselves; they have thought through exactly how they intend to achieve what they want. So when something doesn't work, they can relate the failure to specific elements of their performance that may have misfired.

How to implement this: Don't expect the same teacher to suit you forever. We usually need different teachers as our skill level progresses because we outgrow them. One attribute of a good teacher is that they know when to tell a student to move on. As we reach expert levels of performance, we need teachers who are themselves experts. If they're always a step ahead, we can learn from their mistakes instead of making our own.

You get the best results from working with a coach if you show yourself to be receptive to constructive criticism, even if it's uncomfortable to hear. If you respond badly, you disincentivize them from telling you what's most useful to know. Top performers know the goal is to get better, not just to hear you're already great.

Deliberate practice requires intrinsic motivation

Persisting with deliberate practice despite its innate difficulty and discomfort requires a lot of motivation. But that motivation needs to be intrinsic, meaning that it comes from inside us because we find an activity enjoyable for its own sake. This is in contrast to extrinsic motivation, where we participate in an activity to gain an external reward or avoid a negative consequence. Yet another reason why rest is important for deliberate practice is because it helps sustain motivation.

Although deliberate practice can lead to external rewards for using a skill (such as winning a competition or getting a promotion), this should not be the sole reason for practicing it. Extrinsic motivation is unlikely to be enough to get us through the long period of struggle necessary to master a skill. Becoming proficient at anything means spending time failing repeatedly at it, during which there are few external rewards. But if we enjoy getting better for its own sake, we have more of a chance of persevering until our practice starts paying off. We can navigate obstacles because we want to see where the road might take us—the obstacles aren't roadblocks.

If you want to use deliberate practice to master a skill, you need to be willing to keep practicing it no matter what. Although brute force and rewarding yourself can be effective in the short run, it won't work forever. If you're planning to engage in deliberate practice to reach expert-level performance, make sure it's a prospect you feel excited about even if it won't always be fun.

Extrinsic motivation isn't always ineffective, however. People who engage in consistent, sustainable deliberate practice tend to be adept at knowing when and how they need to employ external incentives. It's important to reward yourself when you make progress in your practice and reflect on how far you've come, not just how far is left to go.

The need for intrinsic motivation is one reason why children who are pushed to develop a skill from a young age by their parents don't always end up reaching a high level of performance and often quit as soon as they can.

How to implement this: Make a list of the reasons you want to work on a skill and the benefits getting better at it might bring. Before you begin a deep practice session, reread the list to remind you of why you're bringing your full focus to something difficult. You could

also list some of the benefits you've experienced from it in the past or include quotes from top performers in your field you find inspiring. It might feel cheesy, but it can provide a powerful boost during particularly difficult practice moments. Try to focus on intrinsic reasons and benefits, such as feeling fulfilled.

Keep a "motivation diary" for one week (or longer if possible.) Try setting an alarm to go off every fifteen minutes during each practice session. When the alarm sounds, score your motivation level out of ten (or whichever scale you prefer.) At the end of the week, review your notes to look for any patterns. For example, you might find that you begin to feel demotivated once you've been practicing for more than an hour, or that you feel more motivated in the morning, or some other pattern. This information could be enlightening for planning future deliberate practice sessions, even if it may disrupt your focus at the time. Another method is to simply take notes each day, documenting your current level of motivation to work on your chosen skill. Pay attention to any recurring influences. For example, you might feel more motivated to improve your skill after speaking with a more proficient friend, but less motivated after a bad night's sleep.

One potent option for sustaining motivation is to find someone who can be a reliable cheerleader for you. In an Ask Me Anything session for Farnam Street members, Tesla co-founder Marc Tarpenning explained that having a cofounder is vital for entrepreneurs because partnering with someone else helps sustain motivation. It's rare that both founders feel demotivated on the same day. So if one is struggling, the other can provide the encouragement needed to stay resilient. Having someone to provide extrinsic motivation when you need it can help you persevere at deliberate practice. Your cheerleader doesn't necessarily need to be working on the same skill themselves. They just need to understand your reasons and be willing to remind you of them when you start to doubt whether the hard work is worthwhile.

Deliberate practice takes time and can be a lifelong process

Although deliberate practice tends to result in much faster progress than normal practice, truly mastering a skill is a lifelong process. Reaching the top of a field can take years or even decades, depending on its competitiveness. As the bar for success in many areas keeps rising, more deliberate practice is required to stand out.

When we applaud the top people in any field, we often fail to appreciate that their success almost always came after many years of deliberate practice, which Robert Greene refers to in *Mastery* as "*a largely self-directed apprenticeship that lasts some five to ten years [and] receives little attention because it does not contain stories of great achievement or discovery.*" They may have ultimately benefited from a lucky break, but their extensive

preparation meant they were ready for it. Great achievements tend to come later in life or even near the ends of careers. Those who succeeded young started *very* young.

Throughout Ericsson's decades of research, he searched high and low for an example of a true prodigy: someone born with an innate, remarkable talent. He never found a single proven example. Instead, he discovered that people labeled as prodigies invariably put in enormous amounts of deliberate practice—they just often obscured it on purpose or started at a young age.

Although innate differences count when beginning to learn something (and people who begin with advantages may be more likely to persist), in the long run, deliberate practice always wins out.

David Shenk writes in *The Genius in All of Us*: "*Short-term intensity cannot replace long-term commitment. Many crucial changes take place over long periods of time. Physiologically, it's impossible to become great overnight.*"

According to psychologist John Hayes, creative genius tends to come after ten years of studying relevant knowledge and developing skills. Hayes referred to this as the "ten years of silence." In a study of seventy-six composers with sufficient biographical data available listed in *The Lives of the Great Composers*, Hayes found they almost always created their first notable works (defined as being those for which at least five different recordings were available at the time) at least ten years after commencing a serious study of music. Just three of the five hundred works Hayes included in his sample were composed after less than a decade of preparation—and those were produced in years eight or nine. In additional studies, Hayes found similar patterns for painters and poets.

Later research reinforces Hayes' findings, and any casual survey of the lives of people widely considered to be geniuses tends to show a similar pattern. Making a breakthrough takes time. When it seems like someone was an overnight success, there's almost always a long period of silent deliberate practice preceding it. Innate talents are just a starting point. If we want to master a skill, we need to commit to working on it for a lengthy period of time, likely with few rewards. While there are no assurances that with struggle comes reward, without it the odds are lower.

Not only do world-class performers spend a long time getting good at their core skill, those in creative fields tend to produce an enormous quantity of work before gaining recognition. For every piece of work we're familiar with, there are likely dozens or even hundreds of others few people remember or ever saw.

For example, British prime minister Winston Churchill was known for his masterful public speaking. One of his best-known speeches "We Shall Fight on the Beaches," given in

June 1940, displayed the extent of his command of oration and helped build morale at the time. But it's hard to overstate how prolific Churchill was as a speaker, giving an estimated 3,000 speeches during his political career. For every speech—an average of one per week between 1900 and 1955—he used deliberate practice to prepare. He engaged in focused rehearsals in front of a mirror, taking notes as he went to inform modifications. Churchill also left nothing to chance, planning his pauses and movements in advance. As well as devising his own techniques for added impact, he memorized the works of some of history's most inspiring orators.

Although he doubtless began with a degree of innate talent (his father, Randolph Churchill, was also an admired orator), Churchill clearly used extensive deliberate practice to build upon it. While this impressive resume and history solidified his place on the throne of oratorical excellence, it's important to note that he wasn't a "born speaker"—in fact, he made many mistakes. And he learned from them. If you want to produce a masterpiece, you need to accept that you'll make a lot of less remarkable work first.

Deliberate practice requires intense focus

"*You seldom improve much without giving the task your full attention.*" —Karl Anders Ericsson

The deeper we focus during deliberate practice sessions, the more we get out of them. Intense focus allows us to increase skills and break through plateaus. Developing your attention span can have a huge impact on your life. When asked about his success, Charlie Munger once said, "*I succeeded because I have a long attention span*."

The authors of *The Game Before the Game* write, "*If you can pay attention for only five minutes in practice, then take a break every five minutes. If you can pay attention for only twenty balls, don't hit fifty. To be able to practice longer and maintain the quality of the practice, train yourself to pay attention for longer periods of time….Productive practice is about how present you can stay with your intention and is measured in the quality of the experience as opposed to the quantity of time used.*"

A benefit of getting constant feedback is that it shows you what moves the needle towards improved performance and what is just running in place. Certain practice activities can feel good without having any impact. Top performers prioritize knowing what to prioritize. They always start with the most important thing because anything else is a distraction.

Intense focus is a multiplier of everything else. Keeping an eye on key metrics enables top performers to identify and systematically remove distractions from their lives. To be the best, you need to focus on both the micro and macro level. You need to pay full attention to what you're doing in the current practice sessions, and you need to know how it fits into

the bigger picture of your desired trajectory. Deliberate practice is part of the exploit phase of selecting opportunities.

As the authors of the *International Handbook of Research in Professional and Practice-Based Learning* write, "*Practicing the right things is at the core of the theory of deliberate practice*."

How to implement this: Put the big rocks in first. You can do anything, but you can't do everything. Figure out which practice activities have the biggest influence on your performance and plan to engage in those first before you even consider activities that offer marginal gains.

Deliberate practice leverages the spacing effect

One reason why consistent deliberate practice sessions over the course of years are more effective than longer sessions for a shorter period of time relates to the spacing effect. We can't approach learning a skill through deliberate practice in the same way we quite likely approached studying for tests in school. If we better understand how our minds work, we can use them in the optimal way for learning. By leveraging the spacing effect, we can encode valuable knowledge related to our particular skill for life during practice sessions.

Memory mastery comes from repeated exposure to the same material. The spacing effect refers to how we are better able to recall information and concepts if we learn them in multiple sessions with increasingly large intervals between them. The most effective way to learn new information is through spaced repetition. It works for learning almost anything, and research has provided robust evidence of its efficacy for people of all ages—and even for animals.

Spaced repetition is also satisfying because it keeps us on the edge of our abilities (which, as we saw earlier, is a core element of deliberate practice.) Spaced sessions allow us to invest less total time to memorize than one single session, whereas we might get bored while going over the same material again and again in a single session. Of course, when we're bored we pay less and less attention. The authors of *Focused Determination* put it this way:

There is also minimal variation in the way the material is presented to the brain when it is repeatedly visited over a short time. This tends to decrease our learning. In contrast, when repetition learning takes place over a longer period, it is more likely that the materials are presented differently. We have to retrieve the previously learned information from memory and hence reinforce it. All of this leads us to become more interested in the content and therefore more receptive to learning it.

We simply cannot practice something once and expect it to stick.

By engaging in deliberate practice on a regular basis, even if each practice session is short, we leverage the power of the spacing effect. Once we learn something through spaced repetition, it actually sticks with us. After a certain point, we may only need to revisit it every few years to keep our knowledge fresh. Even if we seem to forget something between repetitions, it later proves easier to relearn.

How to implement this: Forget about cramming. Each time you're learning a new component of a skill, make a schedule for when you'll review it. Typical systems involve going over information after an hour, then a day, then every other day, then weekly, then fortnightly, then monthly, then every six months, then yearly. Guess correctly and the information moves to the next level and is reviewed less often. Guess incorrectly and it moves down a level and is reviewed more often.

The history of deliberate practice

Karl Anders Ericsson: The expert on expertise

"*Learning isn't a way of reaching one's potential but rather a way of developing it.*" —Karl Anders Ericsson, *Peak*

The concept of deliberate practice is attributed to Florida State University psychologist Karl Anders Ericsson, who along with his collaborators performed pioneering research in the field of expert performance. Ericsson spent decades seeking to answer the question of what it takes to become really good at something difficult. His research often focused on medicine, music, and sports.

Ericsson's interest in expert performance kicked off in the late 1970s, when he began working with psychologist Bill Chase at Carnegie Mellon University to study short-term memory. Together, they began a series of experiments to see how many random digits it's possible to memorize after hearing them once. Ericsson and Chase used an undergrad named Steve Faloon as their guinea pig. For a few hours each week, they read out numbers and Faloon repeated as many as he could recall.

Although the experiment might sound dull, they uncovered something intriguing. In a 1982 paper entitled "Exceptional Memory," Ericsson and Chase summarized their findings. Previously, researchers believed the average person could hold just seven random digits in their short-term memory. Yet with careful practice, Faloon began to remember more and more numbers. At his peak and after 200 hours of practice, he could recall 82 digits. To assess if this was a fluke, Ericsson tried the same with a friend, Dario Donatelli. Five years later, Donatelli could recall 113 digits. Both he and Faloon went far beyond what seemed to be an immovable ceiling on human performance and blew past existing world records.

The experience of seeing two people who started off with ordinary memories enhance their capabilities in such a drastic way inspired Ericsson to further study the effects of practice on skills. Could it be that extraordinary abilities came from extraordinary practice, not just innate ability?

Through his studies of expert performers in a range of fields, Ericsson concluded they practiced their skills in a fundamentally different way than amateur practitioners. Ericsson described this kind of practice as “deliberate” due to its methodicial, hyper-conscious nature. He argued that experts become experts largely as a result of the way they practice. They may benefit from innate advantages, but their talents themselves are not innate.

Ericsson also believed that the standards in many additional fields could be improved far beyond their current level if practitioners employed the principles of deliberate practice. Indeed, many fields have seen remarkable increases in their standards for high performance over time. Today, high-schoolers manage athletic feats that were once Olympic level and children play music once considered world-class. This is possible because of better training and knowledge of what it takes to be the best. The more we improve how we train, the more we expand our range of possible performance.

In 2016, Ericsson published *Peak: Secrets from the New Science of Expertise*, a popular science book condensing his learnings from thirty years of research. He also co-edited the 2006 *Cambridge Handbook of Expertise and Expert Performance*.

Malcolm Gladwell: The 10,000 hour rule

The widespread awareness of Ericsson’s work outside the scientific community is in part a result of Malcolm Gladwell’s 2008 book, *Outliers: The Story of Success*. In the book, Gladwell attributed unusual success in different fields to a mixture of lucky factors (such as when or where a person was born) and around 10,000 hours of practice. He based this figure on research, including Ericsson’s, that suggested top performers tended to have put in about that amount of time before reaching peak performance.

Gladwell showed how the success of Bill Gates, the Beatles, and other outstanding performers is not so much to do with what they are like but rather where they come from. “*The people who stand before kings may look like they did it all by themselves*,” Gladwell writes. “*But in fact they are invariably the beneficiaries of hidden advantages and extraordinary opportunities and cultural legacies that allow them to learn and work hard and make sense of the world in ways others cannot.*”

The so-called “10,000 hours rule” caught on. It’s a catchy idea, and many people took it to mean that anyone can master anything if they just put the time in. Ericsson himself disputed Gladwell’s representations of his research, which led to the widespread belief that

the time someone spends practicing predicts their success, without emphasizing the quality of their practice.

Although the backlash against Gladwell's calculation has arguably been exaggerated, it's important to stress that research into deliberate practice emphasizes quality of practice, not quantity. It's all too possible to spend 10,000 hours engaging in a skill without serious improvements. For example, most of us spend hours per day typing, yet we don't see continuous improvements in speed and quality because we're not using deliberate practice.

The useful takeaway from the "10,000 hours rule" is simply that it takes a lot of work to become the best. There's no magic number of practice sessions, and everyone's path will look different. Just because successful people in a given field have spent around 10,000 hours practicing their key skill, that doesn't mean every person who practices that skill for 10,000 hours will become successful.

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The limitations and downsides of deliberate practice

Part of us wants to believe expert performance is something innate and magical so we can recuse ourselves from hard work. The other part of us wants to believe that it's something earned through blood, sweat, and tears—that we too could achieve amazing performance, if only we could devote ourselves to something.

Deliberate practice, in reality, is far more complex and nuanced than many people would have you believe. It's not a panacea, and it won't solve all of your work- and art-related problems. Let's take a look at some of the limitations of deliberate practice.

First of all, deliberate practice is a necessary but insufficient part of becoming a world-class performer. You can't rise to the top without it. But it's not enough on its own to be the absolute best in any field. Once you reach higher echelons for any skill, everyone is engaging in a lot of deliberate practice.

If you're aiming at expertise or just really good performance, deliberate practice will most likely get you there. But the higher you rise, the more luck and randomness end up mattering. However much you engage in deliberate practice, you can't control the chance events (good or bad) that dictate a great deal of life.

When we look at the lives of top performers, they often benefited from specific backgrounds or opportunities, in addition to engaging in deliberate practice. For example, if you're trying to become a champion chess player, it's a big boost if your mother was a champion chess player. Not only will you have potential genetic advantages, you'll have

also likely grown up hearing about chess, been encouraged to practice it from a young age, and have someone to turn to for advice.

Seeing as it takes years of consistent deliberate practice to master a skill, people who begin early in life have an advantage over those who start later on. That doesn't mean you can't become exceptional at something you discover well into adulthood (just look at Julia Child or check out the book *Guitar Zero*). But it does mean that people who begin deliberate practice as kids are more likely to enjoy the success that makes it possible to keep committing to it. If you're trying to master a skill while also having to work an unrelated job, care for your family, and deal with the other myriad responsibilities of adult life, you likely will have less room for it than a ten-year-old.

People who discover they want to master a skill or are encouraged to do so by others early in life have an advantage. Once the opportunity for practice is in place, the prospects of high achievement take off. And if practice is denied or diminished, no amount of talent is going to get you there.

In addition to lucky circumstances, high performers benefit from a combination of deliberate practice and innate talents or physical advantages. However much you practice, certain physical limitations are insurmountable. For example, if you're 165 centimeters tall, you're unlikely to become a professional basketball player. There are some physical abilities, such as particular kinds of flexibility, that can only be developed at a young age when a person's skeletal structure is still forming. It's important to be realistic about your starting point and be aware of any limitations. But that doesn't mean you can't develop workarounds or even use them to your advantage.

Another downside of deliberate practice is that the level of focus it requires can mean practitioners miss out on other parts of life. Top performers often devote almost every waking hour to practice, recuperation from practice, and support activities. For example, a professional dancer might spend several hours a day on deliberate practice with all of the remaining hours going toward sleep, low-impact exercise, stretching, preparing nutritious food, icing his feet, and so on. There is enormous satisfaction in the flow states produced by deliberate practice, but practitioners can absolutely miss out on other sources of happiness, such as spending time with friends.

Deliberate practice is part of the exploit phase of new opportunities. Yet sometimes we can end up having too much grit. We can keep persevering with the skill we're practicing right now, remaining overly passionate, past the point where it serves us. We can wear ourselves out or get hurt or fail to realize when it's no longer worth practicing a skill. For example, a new technology might mean our skill is no longer valuable. If we keep on

deliberate practicing due to sunk costs, we'll be unlikely to see many long-term benefits from it. A crucial skill in life is knowing when to pivot. Focusing too much on our goals can blind us to risks.

In some fields, expertise is hard to quantify or measure, which makes it less clear how to structure practice. There may be no single target to hit or universal rule for what improves performance.

A final limitation to keep in mind is that, as Ericsson explained, "*the cognitive and physical changes caused by training require upkeep. Stop training and they go away.*" If someone can't practice for a period of time, such as due to an injury or having a child, they're likely to see the skills they developed through deliberate practice deteriorate.

Summary

Deliberate practice isn't everything, but if you want to keep improving at a skill or overcome a plateau, you'll benefit from incorporating the principles mentioned in this article. To recap:

- Deliberate practice means practicing with a clear awareness of the specific components of a skill we're aiming to improve and exactly how to improve them.
- The more we engage in deliberate practice, the greater our capabilities become.
- Our minds and bodies are far more malleable than we usually realize.
- Deliberate practice is structured and methodical.
- Deliberate practice is challenging because it involves constantly pushing yourself out of your comfort zone.
- Deliberate practice requires constant feedback and measurement of informative metrics—not vanity metrics.
- Deliberate practice works best with the help of a teacher or coach.
- Continuing deliberate practice requires a great deal of intrinsic motivation.
- Deliberate practice requires constant, intense focus.
- Deliberate practice leverages the spacing effect—meaning a consistent commitment over time is crucial.
- If you're content with your current level of skill or just doing something for fun, you don't necessarily need to engage in deliberate practice
- Deliberate practice is best suited to pursuits where you're actively aiming for a high level of performance or to break beyond some kind of supposed limit.

Step 151-Review, Reflection, Review And Accountability

A. Listen and Follow The Following Book:

1. **How We Think By John Dewey**

B. Analyse: If I win or Lose, I should be excited. If I win or loss, the process should be exactly the same. You have to go back and look:

1. **Good Habits, Virtues, Skills and improvement by 1%.**
2. **Bad Habits, Virtues, Skills and decline by 1%.**
3. **Find the finds I done well and worked.**
4. **Figured out how and why did they work well.**
5. **How can I make them again.**
6. **Find the things I failed. How and why it did not work well.**
7. **Find the things I could do better.**
8. **Find, Study and Analyse my weakness and Strengths. Work hard on my weaknesses. Perfect my strengths and work hard on my strengths.**
9. **Study and Analyse the strength and weakness of the opponent or competitors and work with your weakness to their strengths.**
10. **What are unfinished tasks and what action.**

C. Did I Take Responsibility?

1. **Pay Attention to Details.**
2. **Acknowledge and fix your mistakes.**
3. **Develop proactive approach.**
4. **Offer solution instead of complaints.**
5. **Accept Criticism.**
6. **Show Focus.**

D. Did I take Accountability?

1. **Take Responsibility for the loss and analyse the mistakes I made. Analyse what to change to overcome those mistakes and be better at your craft or any area in life.**
2. **They're completely focused on taking responsibility and taking charge, whether they're competing in sports or managing a family or running a business or driving a bus; they decide how to get the job done, and then they do whatever is necessary to make it happen.".**
3. **Want to know a true sign of a Cleaner? He feels no pressure when he screws up and has no problem admitting when he's wrong and shouldering the blame: When a Cooler makes a mistake, he'll give you a lot of excuses but no solutions. When a Closer makes a mistake, he finds someone else to blame. When a Cleaner makes a mistake, he can look you in the eye and say, 'I Screw up.'".**
4. **Made a mistake? Don't sugar-coat it. Don't look for excuses. Don't blame other people. Own it.**
5. **Develop the confidence to say when you've screwed up – people will respect you for it.**
6. **Next time you're making an excuse, catch yourself. Admit it to yourself that it was your fault. Take responsibility for it. Own it.**

E. Track The Hours Spent For That Week For Different Task.

F. Use Weekly Review To Celebrate Good and Bad Weeks.

G. Do it Correctly, Slowly, Patiently, Methodically, Logically, Take It Time and Do Not Rush Process..

Step 152 - Improvement

Improvement

A. **What First to Improve in Steps of Performance.**
B. **What to Change for better Performance.**
C. **What First to Improve in Steps of Performance.**
D. **What to Change for better Performance.**
E. **Ask yourself: Where are you now?**
F. **Ask yourself: Where do you want to be instead?**
G. **Ask yourself: What are you willing to do to get there?**
H. **Make a plan to get there.**
I. **Act on it.**
J. **Look at the improvement over the long period of time, and decide the steps I will take to improve. Look at the improvement as marathon, where you step by step improving.**
K. **Take One Step at the time to move forward.**
L. **Write Down the Notes on Improvement.**
M. **No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**
N. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

Step 153 - Feedback System In Place

1. Feedback System In Place.

I. **Arrange a feedback, that you will get consistently and reliably.**
II. **This could be hired a coach or friends who are honest.**
III. **Iteration (repetition process) is fundamental basis of all improvement.**

Step 154-Repeat

1. **Repeat.**
    I. **Next Step is to Repeat (steps 1-126) for every single module in learning plan until completed every single one.**

A. Record Strategy, Tactics and Plan.
B. Preparation.
C. Examine.
D. Listen Strategy, Tactics and Plan.
E. Performance.
F. Improvement.
G. Record Reflection and Review.
H. Listen Recorded Reflection, Review.
I. Record Improvement.
J. Listen Improvement.
K. Performance.
L. Record Reflection and Review.
M. Listen Recorded Reflection, Review.
N. Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.

Step 155-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. The world never tells you that you're wrong; it only gives you outcomes.
3. Don't force. Don't resist. Have a beginner's mind. Let the world teach you.
4. **Reality will do a lot of the work for us if we simply align with it.** Most of the time we're simply adding friction because we want the world to work in the way we think it should.
5. If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care

about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything

outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models

allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's

got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do

put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

Step 156- Spend 5k-10k Hours

1. **Spend 5k-10k Hours.**
    I. **Iterate (repetition process) for 5k-10k hours.**
    II. **There are not shortcuts.**
    III. **If you want to be good at anything you need to spend 10k hours trial and error, until you master.**
    IV. **Do It Correctly, Slowly, Patiently, Methodically, Logically Take It Time and Do Not Rush Process.**

PART 21: Deep Work and Prediction

Step 157-Prediction Books

1. **Listen, Follow And Apply Rules of Reading Part 1 to 18, before looking Prediction.**
2. **Listen, Follow and Apply the following Books.**
   - **Financial Analysis, Modelling, and Forecasting Technique**
   - **Financial Planning & Analysis and Performance Management.**
   - **Predictably, The hidden Forces That Shape Our Decision.**
   - **Predictive Analytics For Dummies**
   - **Predictive Analytics.**
   - Reading People_ How to Understand People and Predict Their Behavior- -Anytime, Anyplace.
   - Sports Performance Measurement and Analytics_ The Science of Assessing Performance, Predicting Future Outcomes, Interpreting Statistical Models.
   - Thinking_ The New Science of Decision-Making, Problem-Solving, and Prediction.

Step 158-Steps In Predicting

So How Can You Improve Your Own Prediction Skills?

1. Watch Videos of the Person who I rolling, Sparing, and see the movements and the steps they are taking in order to take one position or the other.

    I. See the opponent favorite attack Tactics:

        • Check The steps they are taking?

        • What angles do they take?

        • What are weaknesses of their in the attack?

        • How can I explore their weakness in my defence?

    II. See the opponent favorite defence tactics

        • Check The steps they are taking?

        • What angles do they take?

        • What are weaknesses of their defence?

        • How can I explore their weakness in my Defence?

2. Watch Live rolling of the person who I rolling, Sparing, and see the movements and the steps they are taking in order to take one position or the other.

    I. See the opponent favorite attack Tactics:

        - Check The steps they are taking?
        - What angles do they take?
        - What are weaknesses of their in the attack?
        - How can I explore their weakness in my defence?

    II. See the opponent favorite defence tactics

        - Check The steps they are taking?
        - What angles do they take?
        - What are weaknesses of their defence?
        - How can I explore their weakness in my Defence?

3. Recognise Patterns- Pay attention the following:

    I. Where are the hands?

    II. Where are the feet?

    III. How the weight is distributed?

    IV. Where the back?

    V. Where is the whole body moves toward?

4. **Know All The Facts.** Analysis starts with data. It's more than data, but it starts with data. You need to be rooted in the real world, and you need to be rigorous. Before you start anything, you need to gather as much data as possible, and then crunch it, which can mean combining data points, but often means discarding data points as well.

5. **Live And Breathe Your Space.** The other key tool in analysis is the understanding of your market, and just as important, your primary research, which by and large means talking to people. You need to be embedded in your space's social and intellectual networks, and you need to talk to the people who are smarter than you, embedded in the space, and learn from them. This creates a virtuous circle: talking to smart people makes you smarter, which makes smart people want to talk with you.

6. **Forget Everything I've Just Said.** Data is fine, even necessary. Primary research is fine, even necessary. But there's another element which is just as necessary (and most often lacking). It's that special something. It's often dubbed insight. It's seeing the trend that nobody else is seeing. This is a question that has obsessed me. I don't know that I've cracked it, but I think I've found a method that works for me, and that is: every once in a while, forget everything you know. Every once in a while, you have to look at what you're obsessed about like you don't know anything about it. Clear your mind. Think about other stuff. It sounds silly, but what matters is putting yourself in a frame of mind where you're looking at the situation from a new angle, and realizing that by only focusing yourself on your area of expertise you will miss things.

7. Establish a Base Rate. Compare. Establish the “base rate,” the typical historical frequency or severity of the outcome you are trying to forecast, by picking a reference class of similar past events. Very few situations are unique; think deeply enough about the instance at hand, and you will likely discover a set of historical precedents for it. Instead of guessing how stocks will do if interest rates rise by one percentage point, for instance, look at the full sample of all such past interest-rate increases, take the average of subsequent stock performance and use that as your base-rate assumption.

8. Be Specific. Try to flush your ignorance out into the open: Don’t just say, “I think emerging-markets stocks are cheap right now.” Instead, say “There is an 80% probability that emerging-markets stocks will go up at least 25% in the next 12

months.” When significant new information comes in, adjust your forecast incrementally.

9. Consider the Opposite. Invert. Consider the opposite and ask what information you would need if you were trying to make a case that emerging-markets stocks will go down at least 25% in the next 12 months. Then seek it out, absorb it and test whether you need to revise your original forecast.

10. Cast a Wide Net. Find a variety of sources for news and analysis, varying widely in their viewpoints, vested interests and geographic origin. Discount the sources that use the self-reinforcing language of overconfidence: Words like “furthermore,” “clearly” and “certain” or “impossible.” Heed most closely those sources that admit uncertainty with words like “however,” “but,” and “on the other hand.”

11. Measure Everything. Record in detail the reasoning behind your forecasts. When you turn out to be right, don’t just celebrate; check your records to see whether you were right for the reasons you predicted or whether you just got lucky. When you turn out to be wrong, compare this error to the other times you were mistaken, looking for patterns to correct. If you don’t measure every meaningful aspect of your forecasts, you will never improve.

Step 159-Have I done The Work

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        C. Will you care about what you're reading in a month? In a year? In five years?
        D. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        E. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        F. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 160-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. The world never tells you that you're wrong; it only gives you outcomes.
3. Don't force. Don't resist. Have a beginner's mind. Let the world teach you.
4. **Reality will do a lot of the work for us if we simply align with it.** Most of the time we're simply adding friction because we want the world to work in the way we think it should.
5. If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care

about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything

outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models

allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's

got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do

put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

PART 22: Deep Work and Feynman Technique

Step 161-Feynman Technique

Feynman Technique

I. **Choose a Concept, Idea, topic to Learn. Select a Topic You are interested in learning about and write it at the top of the blank page in the Notebook or Paper.**

   A. Choose your topics carefully: Not everything that you study suits this technique. Usually abstract complex ideas are best understood by Feynman technique but ideas that are evidence-based/observational might not really be suited for this.

   B. Selecting a concept to study compels you to be intentional about what you don't know. It also forces you to choose a topic that's small enough that it could reasonably fit onto one or several pages.

   C. **You face what you don't know**. By writing a topic down on a blank page, you acknowledge you're starting from scratch or at least filling in some blanks. In doing so, take the initial step in the process.

   D. **You need to be specific**. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.

II. **Use It For Real.**

   A. Use it for real: perfectly suitable for weekly tech-talks, lectures, paper-reading, Study, Bible Study, Sermon or any type of study, deep work and deep study sessions.

III. Study The Topic By Reading, Listening, Watching and Communicating.

A. You have to start small. You really only have a page (or a few) to fill up with information. You can't fit everything there is to know about "Evolutionary Science" or "Microeconomics" or "Psychology" on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.

B. Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.

C. Actually put the time and effort: Once you have selected the correct set of topics, make sure you actually spend the time and effort to go through the entirety of the techniques. Feynman technique is great for having a basic framework of the topic inside your head with the details chopped off. It's important to get a very clear picture of the basics in your head right - the details can be filled in later.

D. Make it your own.
   - Start with not knowing.
   - Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
   - Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

E. Take Notes On the Topic From Study.

F. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

G. Don't write notes on notes: Life is short.

H. Cornell Notes.
   - How Will I Take Notes and Cornell Note Take Method Pages 79-82.

IV. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

V. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

VI. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.**

A. **Step 1- Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method and Follow Each Steps Of The Method Until Finish All Steps, While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times For Each Step.**

B. **Step 2- Following Rules of Reading Methods:**

C. **Skimming:**

I. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

D. **Entertainment**

I. **Method 1-Speed Reading. Pages 58-63.**

E. **Methods for Basic Knowledge For Deep Work or Bible Study.**

I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**
III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
VI. **Method 6-Devotional Bible Read. Pages 72-73.**

F. **Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**

I. **Method 1-Chapter Summary Method. Pages 142-146.**
II. **Method 2-Character Quality Method. Pages 147-159.**
III. **Method 3-Thematic Method. Pages 160-162.**
IV. **Method 4-Biographical Method. Pages 163-175.**
V. **Method 5-Topical Method. Pages 176-179.**
VI. **Method 6-Word Study Method. Pages 180-188.**
VII. **Method 7-Book Background Method. Pages 189-193.**
VIII. **Method 8-Book Survey Method. Pages 194-204.**

IX. Method 9-Chapter Analysis Method. Pages 205-214.
X. Method 10-Paragraph Study. Pages 215-228.
XI. Method 11-Verse by Verse Analysis Method. Pages 229-233.
XII. Method 12-Book Synthesis Method. Pages 234-237.
XIII. Method 13-Theological Study Method of Bible Study. Pages 238-244.
XIV. Method 14-Studying Bible Prophecy. Pages 245-258.
XV. Method 15-Typological Study Method. Pages 259-261.
XVI. Method 16- John MacArthur Way Bible Study. Pages 262-267.
XVII. Method 17-Inductive Bible Study Method. Pages 268-295.
XVIII. Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.
XIX. Method 19-Theological Group of Principles. Pages 302-305.
XX. Method 20- How To Read A Book Pages 306.

G. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.

I. Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.
II. Method 22-How To Read A Book For Various Books. Pages 341-599.
III. Method 23- Syntopicon Pages 600-641.
IV. Method 24-The Craft of Research. Pages 642-881.
V. Method 25-Research Books can Be Used. Pages 882-897.
VI. Method 26-Investigative Journalism. Pages 898-923.
VII. Method 27-Mixed Methods of Rules of Reading. Pages 924-943.

A. Learning should be iterative. More often than not, learning something challenging takes several attempts. With the Feynman Technique, returning to the source material is an explicit part of the learning process. When gaps in our knowledge arise and our explanations aren't quite right, revisiting our primary and secondary sources can help solidify what we're learning.
B. Getting it right will likely take several iterations. That's a good thing; the more you refine your explanations, the more your understanding will deepen. Learning becomes an iterative process. Rather than viewing learning as one-and-done, this step gives you permission to continuously refresh your knowledge.
C. You're actively engaged. Using sources to polish our own explanations and models is an active process. When we learn passively, committing details to memory is more challenging. When we're actively part of creating our own summaries and reasoning, drawing intentionally from original information to fill our blind spots, we can more readily commit knowledge to our long-term memory.
D. You expand your knowledge base. Paradoxically, the more we learn, the more *our capacity* to learn increases. Looking through a chapter of a textbook might feel like a different language the first time around. The second time it becomes more clear. The third time, with a strong base already, we pick up nuances we couldn't have possibly seen before.

VIII. Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

IX. Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

X. **Reflect, Refine, and Simplify.**
   A. **Only when you can explain the subject in simple terms do you** understand it.
   B. Simple is beautiful.
   C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
   D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
   E. Go back to the source material, reviewing the parts you don't quite understand yet.
   F. Repeat until you have a simple explanation.

XI. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.**
   A. **Step 1- Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method and Follow Each Steps Of The Method Until Finish All Steps, While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times For Each Step.**
   B. **Step 2- Following Rules of Reading Methods:**
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      II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**

III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
VI. **Method 6-Devotional Bible Read. Pages 72-73.**

F. **Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
I. **Method 1-Chapter Summary Method. Pages 142-146.**
II. **Method 2-Character Quality Method. Pages 147-159.**
III. **Method 3-Thematic Method. Pages 160-162.**
IV. **Method 4-Biographical Method. Pages 163-175.**
V. **Method 5-Topical Method. Pages 176-179.**
VI. **Method 6-Word Study Method. Pages 180-188.**
VII. **Method 7-Book Background Method. Pages 189-193.**
VIII. **Method 8-Book Survey Method. Pages 194-204.**
IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

G. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**

II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
III. **Method 23- Syntopicon Pages 600-641.**
IV. **Method 24-The Craft of Research. Pages 642-881.**
V. **Method 25-Research Books can Be Used. Pages 882-897.**
VI. **Method 26-Investigative Journalism. Pages 898-923.**
VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

H. Learning should be iterative. More often than not, learning something challenging takes several attempts. With the Feynman Technique, returning to the source material is an explicit part of the learning process. When gaps in our knowledge arise and our explanations aren't quite right, revisiting our primary and secondary sources can help solidify what we're learning.
I. Getting it right will likely take several iterations. That's a good thing; the more you refine your explanations, the more your understanding will deepen. Learning becomes an iterative process. Rather than viewing learning as one-and-done, this step gives you permission to continuously refresh your knowledge.
J. You're actively engaged. Using sources to polish our own explanations and models is an active process. When we learn passively, committing details to memory is more challenging. When we're actively part of creating our own summaries and reasoning, drawing intentionally from original information to fill our blind spots, we can more readily commit knowledge to our long-term memory.
K. You expand your knowledge base. Paradoxically, the more we learn, the more *our capacity* to learn increases. Looking through a chapter of a textbook might feel like a different language the first time around. The second time it becomes more clear. The third time, with a strong base already, we pick up nuances we couldn't have possibly seen before.

VIII. Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

IX. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

PART 23: Sport and Jiujitsu, Judo Or Wrestling

Step 162-What Trainings Do I Do On Daily Basis Schedule.)

Decide The Training I Will Do It Today

A. Monday:

- **I. Gym Jiujitsu.**
- **II. Home Wrestling, Jiujitsu, Judo And Luta Livre.**
- **III. Home Boxing.**
- **IV. Home Muay Thai and Lethwei.**
- **V. Home Sambo and MMA.**
- **VI. Breath.**
- **VII. Conditioning.**
- **VIII. De-escalation.**
- **IX. Situational Awareness.**

B. Tuesday:

- **I. Home Wrestling, Jiujitsu, Judo And Luta Livre**
- **II. Home Boxing.**
- **III. Home Sambo and MMA.**
- **IV. Home Muay Thai and Lethwei.**
- **V. Breath.**
- **VI. Strength.**

C. Wednesday:

I. **Gym Jiujitsu.**
II. **Home Wrestling, Judo, Jiujitsu And Luta Livre**
III. **Home Sambo and MMA.**
IV. **Home Boxing.**
V. **Home Muay Thai and Lethwei.**
VI. **Breath.**
VII. **Conditioning.**
VIII. **De-escalation.**
IX. **Situational Awareness.**

D. Thursday:

I. **Home Wrestling, Jiujitsu, Judo And Luta Livre**
II. **Home Sambo and MMA**
III. **Home Boxing.**
IV. **Home Muay Thai and Lethwei.**
V. **Stretch and Flexibility.**
VI. **Strength.**
VII. **Conditioning.**

E. Friday:

I. **Gym Jiujitsu.**
II. **Home Wrestling, Jiujitsu, Judo and Luta Livre.**
III. **Home Boxing.**
IV. **Home Sambo and MMA.**
V. **Home Muay Thai and Lethwei.**
VI. **Breath.**

VII. Conditioning.

VIII. Stretch and Flexibility.

F. Saturday:

I. Home Wrestling, Jiujitsu, Judo And Luta Livre.

II. Home Boxing.

III. Home Sambo and MMA.

IV. Home Muay Thai and Lethwei.

V. Breath.

VI. Conditioning.

VII. Strength.

VIII. De-escalation.

IX. Situational Awareness.

G. Sunday:

I. Gym Jiujitsu

II. Home Wrestling, Jiujitsu, Judo And Luta Livre.

III. Home Boxing.

IV. Home Sambo and MMA.

V. Home Muay Thai and Lethwei.

VI. Breath.

VII. Conditioning.

VIII. Strength.

IX. Mental Tough.

X. De-escalation.

XI. Situational Awareness.

Step 163-What Specific Training Do I Want To Practice Today

Step 1- Out of the Weekly And Daily Goals and Tasks, Decide One Technique, Practices and Exercise I will Drills Today For Jiujitsu, Judo or Wrestling. Check BJJ Template For The Different Practices in Excel.

1. **Current Focus on Fundamental Skills At Home.**
2. **Current Focus on 80/20 Principles of Attack and Defence of BJJ at Home.**
3. **Sparing Focus on Defence.**
4. **Sparing Focus on Attack.**
5. **What To Do When Opponent Does, is or has.**
6. **Instructional Video Of BJJ To Train.**
7. **Video Link To The Technique and Good Resources.**
8. **Mistakes and Solutions To Those Mistakes.**
9. **Current Focus on What Practices at the BJJ Gym.**
10. **Current Focus on Principles of Attack and Defence OF BJJ At Home.**

Step 2-Apply Step By step The technique as it was written in BJJ Template. Drill The Technique and Exercises At Home 1-1000 Times, Until I can do It Perfectly without any Problems.

Step 3- Prior The Gym, Prepare, My BJJ Game Plan For Rolling From BJJ Template The Following:

1. **Current Focus on 80/20 Principles of Attack and Defence of BJJ at Home.**
2. **Sparing Focus on Defence.**
3. **Sparing Focus on Attack.**
4. **Mistakes and Solutions To Those Mistakes.**

Step 4-Always Think About Every Steps in my attack or defence and see the following:

- **Use SWOT analysis of My Attack and Defence?**
- **USE SWOT Analysis of Opponent Attack and Defence?**
- **USE 80/20 Principle for My Attack, Defence, Sweep, Submission, Movement and Go To Move?**
- **USE 80/20 Principle for Opponent Attack, Defence, Sweep, Submission, Movement and Go To Move?**
- **What makes you uncomfortable in any area and work on the weaknesses of mine.**
- **In jiujitsu I have to prepare in things that makes me uncomfortable. Look for the techniques based on 80/20 principle. Look for the techniques that are simple but have the highest success rate.**
- **What mistakes I did In my attack and defence?**
- **What mistakes My opponent did in attack and defence?**
- **How Can I explore the mistakes and weaknesses of my opponent the attack and defence?**
- **How Can opponent explore mistakes and weaknesses of my attack and defence?**
- **Use 5W and 1 H**

Step 5-Use The Following Technique to Study, Watch and Predict Opponent Defence, Offence, Submission, Counterattack and Counter Defence:

1. **Study and Watch Videos of the Person who I rolling, Sparing, and see the movements and the steps they are taking in order to take one position or the other. Use 80/20 Principle.**
    I. **See the opponent favourite attack Tactics:**
        - **USE SWOT analysis**
        - **Use 5W and 1 H.**

- **Use 80/20 Principle**
- **Check The steps they are taking?**
- **What angles do they take?**
- **What are weaknesses of their in the attack?**
- **How can I explore their weakness in my defence?**

II. **See the opponent favourite defence tactics.**
    - **Use SWOT Analysis**
    - **Use 5W and 1 H.**
    - **Use 80/20 Principle**
    - **Check The steps they are taking?**
    - **What angles do they take?**
    - **What are weaknesses of their defence?**
    - **How can I explore their weakness in my Defence?**

2. **Watch Live rolling of the person who I rolling, Sparing, and see the movements and the steps they are taking in order to take one position or the other. USE 80/20 Principle.**
    I. **See the opponent favorite attack Tactics:**
        - **Use SWOT Analysis**
        - **Use 5W and 1 H.**
        - **Use 80/20 Principle.**
        - **Check The steps they are taking?**
        - **What angles do they take?**
        - **What are the Strengths and Weakness In Their Attack**
        - **How can I explore their weakness in my defence?**
        - **What Opportunities and Threats In their attack**
        - **What opportunities and Threats I have in their attack?**

II. **See the opponent favourite defence tactics. Use 80/20 Principle.**
    - **USE SWOT ANALYSIS.**
    - **Use 5W and 1 H.**
    - **Use 80/20 Principle.**
    - **Check The steps they are taking?**
    - **What angles do they take?**
    - **What are weaknesses of their defence?**
    - **How can I explore their weakness in my Defence?**
    - **What are the Strengths and Weakness In Their Defence?**
    - **How can I explore their weakness in my Attack?**
    - **What Opportunities and Threats In their DEFENCE?**
    - **What opportunities and Threats I have in their DEFENCE?**

3. **Use 80/20 Principle, Recognise Patterns- Pay attention the following:**
    I. **Where are the hands?**
    II. **Where are the feet?**
    III. **How the weight is distributed?**
    IV. **Where the back?**
    V. **Where is the whole body moves toward?**
    VI. **Use 5W and 1 H**

4. **Use 80/20 Principle In Prediction.**

Step 6- Try to predict what opponent Step Would Be, if I take this or that route in the attack, defence, Submission, Counter Attack and Counter Submission. Based on The Step 5. Use 80/20 Principle AND SWOT.
Step 7- Try to predict opponent move in attacking, defence, Submission, Counter Attack, and Counter Defence and how can I counter? This is Based on the Step 5. Use 80/20 Principle AND SWOT.

Step 8- Try to predict the opponent defence, Submission and attack plan, when Roll. This is based on the Step 5. Use 80/20 Principle AND SWOT.

Step 9- Let The World Do The Work For You.

1. **The world never tells you that you're wrong; it only gives you outcomes.**
2. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
3. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
4. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
5. **When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world**

continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.

6. **You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.**
7. **As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.**
8. **Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.**
9. **If you <u>understand the world as it really is</u>, not as you'd wish it to be, you will begin to make better decisions almost immediately.**

Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

10. **How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.**
11. **This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet**

of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

Step 10- In the Gym Practice:

1. **Warm Up**
2. **Listen What Are Instruction in Practice.**
3. **Use Normal, Diaphragmatic or Gracie Breathing.**
4. **Practice The Drill and Think, How Can I execute this drill perfectly.**
5. **Be Proactive.**
6. **Take One Task At the Time.**
7. **Develop Mental Toughness and Have Jordan and Kobe Mindset In Jiujitsu.**
8. **Ask Questions.**
9. **Respect The Instructor, Mat and Opponent.**
10. **Practice And Fail, Practice and Fail, Practice until Success.**

Step 11- In the Gym Rolling or Competition.

1. **Before The Roll Think The Defence, Attack, Submission or Sweep From BJJ Template I WILL Apply, and How Will I apply.**
2. **Think While Rolling the Following:**
    I. **Think, How Can I execute The Game Plan From Start to the End by Being In any Position at the time.**
    II. **What Is the next Step Do I need To take, in order to fully execute the BJJ Template Game Plan.**
    III. **What Do I need to Do To Prevent Me to be in the position, where the opponent wants me to be.**
    IV. **Think also while rolling**

- **USE AND APPLY SWOT Analysis for Myself and Opponent**
- **USE and Apply 80/20 Principle For Myself and Analysing Opponent While Rolling.**
- **What mistakes I did In my attack and defence?**
- **What mistakes My opponent did in attack and defence?**
- **How Can I explore the mistakes and weaknesses of my opponent the attack and defence?**
- **How Can opponent explore mistakes and weaknesses of my attack and defence?**
- **Use 5W and 1H.**

Step 12- After The Roll, Analyse and Evaluate:

1. **Success: Find what I have done well and worked**
    - **Figured out how and why did they work well.**
    - **How Can I make them work again.**
2. **Failure: Find things I failed. How and why it did not Worked well?.**
3. **Improvement: Find the things I could do better.**
4. **Use 80/20 Principle.**

Step 13-After The Gym:

1. **Show Respect By Bow.**
2. **Thanking.**

Step 14-Progression of BJJ:

1. **Without basics and foundations and fundamentals, you cannot progress.**
2. **Repetition:**
    I. **Practice, Practice, Practice every day.**
    II. **Repeat 1000 times.**
    III. **Drill the moves 1000 times until I can do automatically.**

3. **Use and Apply 80/20 Principle At all Time.**
4. **USE SWOT ANALYSIS For Myself and Opponent.**
5. **What makes you uncomfortable in any area and work on the weaknesses of mine.**
6. **In jiujitsu I have to prepare in things that makes me uncomfortable. Look for the techniques based on 80/20 principle. Look for the techniques that are simple but have the highest success rate.**
7. **A Cleaner: Means never being satisfied. It means creating new goals every time you reach your personal best. If you're good, it means you don't stop until you're great. If you're great, it means you fight until you're unstoppable.**
8. **Steps to winning has infinite steps and constantly changing. Do not look for steps in success and winning. Work Hard, and try push to my limits.**
9. **Perfect Your craft by doing over and over again.**
10. **Fail over, and over again, as this leads to success.**
11. **Never fear about the skills, if you put work. Work ethic eliminates fear. If you put work you know what you are capable of doing, what you are not**
12. **Master your weakness, so they become strengths.**
13. **Every day, challenge yourself to be uncomfortable.**
14. **Every day, push yourself past your own mind-created limits and soon your old limits become your new normal.**
15. **That's how you grow. By pushing your boundaries and expanding them.**
16. **Relentless-Relentless is Attack, Attack the problem or the task and never give an inch to anybody and always go after, and if there is a challenge with this, be excited and see how you stack up and measure against this problem, if I am good enough. If I**

am not good enough I will prepare next time, I will be good enough.

17. **Stop looking for the shortcut. Do the work and Grind Constantly.**
18. **Sorry, there's no off-season when you're serious about being a winner."**
19. **Just show up, work hard, and listen. That's your part of the deal. Do the work.**
20. **Take one challenge at the time, Once overcome the challenge, then move to another challenge and hardship.**
21. **Be Resilience-Strength of character and toughness in any area of Life.**
22. **Use 5W and 1 H.**

Step 164- Letting The World Do The Work For You

Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.

7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.
    I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.
    II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your

outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve.

Optically, they “reorganize their incentive programs,” but practically, they’ve simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He’s got all these beautiful charts on how much more competitive you’ll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You’re sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you’re in. However, you can be damn sure the salesman is now knocking on your competitor’s door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn’t always a comfortable reality. Understanding how the world works isn’t easy and it shouldn’t be. It’s hard work. If it were easy, everyone would do it. And it’s not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it’s extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don’t line up with reality as we think something that isn’t true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we’ve got all the information, if we’re on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world’s feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall

over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding

Step 165- Reflection, Review and Improvement

Record Reflection, Review and Improvement

A. **Record the Reflection and Review.**
B. **Analyse: If I win or Lose, I should be excited. If I win or loss, the process should be exactly the same. You have to go back and look:**
    1. **Jiujitsu, Wrestling, Judo.**
        - **Was There an improvement by 1%, where was the improvement.**
        - **Success: Find what I have done well and worked well.**
        - **Figured out how and why did they work well.**
        - **How Can I make them work work again.**
        - **Use 5W and 1 H**

        - **Failure: Was there a declined by 1%, where was the decline?**
        - **Find things I failed: Figured out how and why they did not work.**
        - **Use 5W and 1 H**

Improvement

- **Find the things I could do better.**
- **What First to Improve in Steps of Performance.**
- **What to Change for better Performance.**
- **Decide and Prioritise 1-3 Challenges and Problems to improve**
- **Steps I will Take To Improve.**
- **Look at the improvement over the long period of time, and decide the steps I will take to improve. Look at the improvement as marathon, where you step by step improving.**
- **Take One Step at the time to move forward.**
- **Use 80/20 Principle.**
- **Use 5W and 1H.**

- **No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**

Analyse

- **Use 80/20 Principle.**
- **Use 5W and 1H.**
- **Find, Study and Analyse my weakness and Strengths. Work hard on my weaknesses. Perfect my strengths and work hard on my strengths.**
- **Study and Analyse the strength and weakness of the opponent or competitors and work with your weakness to their strengths.**
- **Analyse My Mistakes in Rolling.**
- **Analyse Opponent Mistakes in Rolling.**
- **Find and Analyse The Opportunity and Threat.**

Part 24: Sport and Fighting Sport, Conditioning, Stretching and Flexibility, Strength, Breathing, Mental Tough And Develop Mindset.

Step 166 - Books On Muscle Training

Books On Sport

1. **Home workout circuit training 6 week exercise band workout & bodyweight training.**
2. **Men's Health Home Workout Bible.**
3. **Men's Health Natural Bodybuilding Bible_ A Complete 24-Week Program For Sculpting Muscles That Show.**
4. **Men's Health Your Body is Your Barbell_ No Gym. Just Gravity. Build a Leaner, Stronger, More Muscular You in 28 Days!.**
5. **Predictive analytics for dummies.**
6. **The Men's Health and Women's Health Big Book of Sex_ Your Authoritative, Red-Hot Guide to the Sex of Your Dreams.**
7. **The Men's Health Big Book of Exercises_ Four Weeks to a Leaner, Stronger, More Muscular YOU!**
8. **The Men's Health Big Book_ Getting Abs_ Get a Flat, Ripped Stomach and Your Strongest Body Ever--in Four Weeks.**
9. **The Women's Health Big Book of Exercises_ Four Weeks to a Leaner, Sexier, Healthier YOU!.**
10. **The Women's Health big book of yoga_ the essential guide to complete mind_body fitness.**

Step 167-What Trainings Do I Do On Daily Basis Schedule.)

Decide The Training I Will Do It Today

A. Monday:

- **I. Gym Jiujitsu.**
- **II. Home Wrestling, Jiujitsu, Judo And Luta Livre.**
- **III. Home Boxing.**
- **IV. Home Muay Thai and Lethwei.**
- **V. Home Sambo and MMA.**
- **VI. Breath.**
- **VII. Conditioning.**
- **VIII. Deescalation.**
- **IX. Situational Awareness.**

B. Tuesday:

- **I. Home Wrestling, Jiujitsu, Judo And Luta Livre**
- **II. Home Boxing.**
- **III. Home Sambo and MMA.**
- **IV. Home Muay Thai and Lethwei.**
- **V. Breath.**
- **VI. Strength.**

C. Wednesday:

I. **Gym Jiujitsu.**
II. **Home Wrestling, Judo, Jiujitsu And Luta Livre**
III. **Home Sambo and MMA.**
IV. **Home Boxing.**
V. **Home Muay Thai and Lethwei.**
VI. **Breath.**
VII. **Conditioning.**
VIII. **Deescalation.**
IX. **Situational Awareness.**

D. Thursday:

I. **Home Wrestling, Jiujitsu, Judo And Luta Livre**
II. **Home Sambo and MMA**
III. **Home Boxing.**
IV. **Home Muay Thai and Lethwei.**
V. **Stretch and Flexibility.**
VI. **Strength.**
VII. **Conditioning.**

E. Friday:

I. **Gym Jiujitsu.**
II. **Home Wrestling, Jiujitsu, Judo and Luta Livre.**
III. **Home Boxing.**
IV. **Home Sambo and MMA.**
V. **Home Muay Thai and Lethwei.**
VI. **Breath.**

VII. Conditioning.

VIII. Stretch and Flexibility.

F. Saturday:

I. Home Wrestling, Jiujitsu, Judo And Luta Livre.

II. Home Boxing.

III. Home Sambo and MMA.

IV. Home Muay Thai and Lethwei.

V. Breath.

VI. Conditioning.

VII. Strength.

VIII. Deescalation.

IX. Situational Awareness.

G. Sunday:

I. Gym Jiujitsu

II. Home Wrestling, Jiujitsu, Judo And Luta Livre.

III. Home Boxing.

IV. Home Sambo and MMA.

V. Home Muay Thai and Lethwei.

VI. Breath.

VII. Conditioning.

VIII. Strength.

IX. Mental Tough.

X. Deescalation.

XI. Situational Awareness.

Step 168-What Specific Training Do I Want To Practice Today

Step 1- Out of the Weekly And Daily Goals and Tasks, Decide 1-4 Techniques, Practices and Exercise I will Drills Today For Boxing, Sambo, MMA, Muay That, Lethwei, Conditioning, Stretching and Flexibility, Strength, Breathing, Mental Tough And Develop Mindset. Check BJJ Template For The Different Practices in Excel.:

1. **Muay Thai and Lethwei**
    A. **Nutrition.**
    B. **Warm up.**
    C. **Clinch.**
    D. **Low Kicks.**
    E. **High Kicks.**
    F. **Knees.**
    G. **Elbows.**
    H. **Hooks.**
    I. **Uppercuts.**
    J. **Defence.**
    K. **Headbutt**
    L. **Offence.**
    M. **Leg workouts.**
    N. **Drills.**

2. **Boxing.**
    A. **Nutrition.**
    B. **Warm Up.**
    C. **Hooks.**
    D. **Straights.**
    E. **Uppercuts.**
    F. **Jabs.**
    G. **Leg Works.**
    H. **Drills**

3. Conditioning.

- A. Nutrition.
- B. Cycling.
- C. Jogging or Run.

4. Stretching and Flexibility.

- A. Nutrition
- B. Head.
- C. Shoulders.
- D. Hands.
- E. Hips.
- F. Legs.
- G. Feet.

5. Strength.

A. **Listen and Watch Men's Health Big Book Exercise Pages 1-1100.**
B. **Nutrition.**
C. **Warm Up.**
D. **Hands.**
E. **Chest.**
F. **Back.**
G. **Shoulders.**
H. **Arms.**
I. **Quadriceps and Calves.**
J. **Glutes and Hamstring.**
K. **Core.**
L. **Total Body.**

6. Breathing.

A. **Nutrition.**
B. **Normal Breathing.**
   - **Inhale through nose.**
   - **Exhale through mouth.**
   - **Do 5-10 minutes a day.**

C. **Diaphragmatic Breathing.**
   - **One Hand on Chest, Other on Stomach.**
   - **Inhale Slowly through Nose, and air push stomach upward against the hand, while chest remain still.**
   - **Exhale through Pursed lips, push stomach downward and chest remains still.**
   - **Do 5-10 Min times a day.**

D. Gracie Breath.

- **Lay or Sit on Flat Surface.**
- **One Hand on Chest, Other on Stomach.**
- **Inhale air through Nose Gradually increasing air in the body.**
- **Hand on the chest should be immobile, and the hand on the belly is moving upward.**
- **Back Should not be inflated**
- **Exhale through pursed lips do percussive- 5 beats saying (Shh, Shh, Shh, Shh, Shh).**
- **Hand on the belly goes downward.**
- **Do 5-10 Min times a day.**

7. Mental Tough And Develop Mindset.

A. Mental Toughness.

- **Be the best in each class, Drill, Roll and Competition.**
- **Do not let defeat, Negative thinking ruin self image.**
- **Give my best in each Drill, Roll and Competition.**
- **Never Give up.**
- **Let the EGO be in check in each Drill, Class, Roll and Competition.**
- **Be the hardest working person in each Class, Drill, Roll and Competition.**
- **Always Find Motivation to be better, this could be personal or something inside pushing to be better.**
- **Give 100% in Each Class, Training at home, Drill, Roll, Competition.**
- **When something goes wrong, get it over and move on.**
- **After each class, training at home, drill, roll and competition, think what Good did I do, and the failures.**
- **Be Proactive in my class, drill, home training, roll, and competition and respond positively, and focus and act on what I can control and influence, instead the things I cannot influence and control from outside.**
- **Take One task at the time to learn, and proficient the technique.**
- **Mentally tough people, never blame others, in what life throws at them, instead take full responsibility for what happens in their life.**

- **Get out of the comfort Zone to challenge myself, and by doing this build mental toughness.**
- **Be Relentless.**
- **Stop Make Excuses and Practice Practice Practice.**
- **Be aware of weakness of my BJJ and work hard on to overcome, and that this weakness become my strength.**
- **Fail to go forward fast.**
- **Evaluate my experiences and come up with a strategy to not fail again and execute new strategy.**
- **Hard work conquers all.**
- **Have a good work habits.**
- **Reevaluate my BJJ and reflect on daily, weekly, monthly and yearly basis.**

B. Mindset

- **Accept the failure, but never accept not trying.**
- **Train hard in class, at home, drill so that it would be easier in competition.**
- **Bleed more in training, at home, drills, so that you less bleed in the battle.**
- **Be Hardest Working Everywhere I go.**
- **Look For Challenge and overcome those Challenges.**
- **Look For Failures as Path for Success.**
- **Discipline myself wake up early and train and work hardest day in and day out.**
- **Word Hard like nobody will ever work.**
- **Constantly practice and upgrade myself.**
- **Earn successfully through determination consistent practice and put lots of effort.**
- **If I want to be best, there is no shortcuts, therefore work hardest.**
- **Do not afraid struggles, but embrace and work harder on daily basis.**
- **Stay in the moment and be in the present, and not somewhere else.**
- **Give my best all the time.**
- **Be intense I my training, drill, train at home, roll and competition.**

Step 2-Apply Step By step The technique as it was written in BJJ Template. Drill The Technique and Exercises At Home 1-1000 Times, Until I can do It Perfectly without any Problems.

Step 3-Always Think About Every Steps in my attack or defence and see the following:

- **80/20 of My Attack and Defence?**
- **80/20 of Opponent Attack and Defence?**
- **USE SWOT Analysis for My Attack and Defence?**
- **Use SWOT ANALYSIS For Opponent Attack and Defence?**
- **What mistakes I did In my attack and defence?**
- **What mistakes My opponent did in attack and defence?**
- **How Can I explore the mistakes and weaknesses of my opponent the attack and defence?**
- **How Can opponent explore mistakes and weaknesses of my attack and defence?**

Step 4-Use The Following Technique to Study, Watch and Predict Opponent Defence, Offence, Submission, Counterattack and Counter Defence:

1. **Study and Watch Videos of the Person who I rolling, Sparing, and see the movements and the steps they are taking in order to take one position or the other.**
    - **I. See the opponent favourite attack Tactics:**
        - **Check The steps they are taking?**
        - **What angles do they take?**
        - **What are weaknesses of the attack?**
        - **How can I explore their weakness in my defence?**
    - **II. See the opponent favourite defence tactics.**
        - **Check The steps they are taking?**

- **What angles do they take?**
- **What are weaknesses of their defence?**
- **How can I explore their weakness in my Defence?**

Step 5- Try to predict what opponent Step Would Be, if I take this or that route in the attack, defence, Submission, Counter Attack and Counter Submission. Based on The Step 5.

Step 6- Try to predict opponent move in attacking, defence, Submission, Counter Attack, and Counter Defence and how can I counter? This is Based on the Step 5.

Step 7- Try to predict the opponent defence, Submission and attack plan, when Roll. This is based on the Step 5.

Step 8- Let The World Do The Work For You.

1. **The world never tells you that you're wrong; it only gives you outcomes.**
2. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
3. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
4. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of**

the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman

5. **When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.**
6. **You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.**
7. **As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World**

Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

8. **Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.**
9. **If you <u>understand the world as it really is</u>, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.**
10. **How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.**

11. **This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.**

Step 9- After The Roll, Analyse and Evaluate:

1. **Success: Find what I have done well and worked**
    - **Figured out how and why did they work well.**
    - **How Can I make them work again.**
2. **Failure: Find things I failed. How and why it did not Worked well?.**
3. **Improvement: Find the things I could do better.No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**

Step 169- Letting The World Do The Work For You

Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.

7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.
    I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.
    II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your

outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve.

Optically, they “reorganize their incentive programs,” but practically, they’ve simply expended energy to stay in place. Another, perhaps more complicated, example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He’s got all these beautiful charts on how much more competitive you’ll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You’re sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you’re in. However, you can be damn sure the salesman is now knocking on your competitor’s door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn’t always a comfortable reality. Understanding how the world works isn’t easy and it shouldn’t be. It’s hard work. If it were easy, everyone would do it. And it’s not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it’s extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don’t line up with reality as we think something that isn’t true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we’ve got all the information, if we’re on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world’s feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall

over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding

Step 170- Reflection, Review and Improvement

Record Reflection, Review and Improvement

A. **Record the Reflection and Review.**
B. **Analyse: If I win or Lose, I should be excited. If I win or loss, the process should be exactly the same. You have to go back and look:**
    1. **Muay Thai, Lethwei Boxing, Strength, Conditioning, Breath, Stretching, Flexibility, Mental Tough and Mindset.**
        - **Was There an improvement by 1%, where was the improvement.**
        - **Success: Find what I have done well and worked in the following area:**
        - **Figured out how and why did they work well.**
        - **How Can I make them work again.**

        - **Failure: Was there a declined by 1%, where was the decline?**
        - **Find things I failed. How and why they did not work.**

Improvement

- **Find the things I could do better.**
- **What First to Improve in Steps of Performance.**
- **What to Change for better Performance.**
- **Decide and Prioritise 1-3 Challenges and Problems to improve**
- **Steps I will Take To Improve.**
- **Look at the improvement over the long period of time, and decide the steps I will take to improve. Look at the improvement as marathon, where you step by step improving.**
- **Take One Step at the time to move forward.**
- **No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**

Analyse

- **Find, Study and Analyse my weakness and Strengths. Work hard on my weaknesses. Perfect my strengths and work hard on my strengths.**
- **Study and Analyse the strength and weakness of the opponent or competitors and work with your weakness to their strengths.**
- **Analyse My Mistakes in Rolling.**
- **Analyse Opponent Mistakes in Rolling.**
- **Find and Analyse The Opportunity and Threat.**

Part 25: Monthly Journaling

Step 171-Materials Needed and Listen And Follow Rules of Reading For Monthly Journaling

1. Organise Materials for Journaling
    - Phone
    - Headphone
    - Pen
    - CopyBook
    - AudioRecorder on The Phone

2. Listen, Follow and Apply Rules of Reading For Journaling and Review of The Day, When Doing Journaling and Review of A Month.
3. Listen, Follow and Apply Books Throughout the Journaling, Reflection, Review, Analyse : How we Think By John Dewey,
4. Write Down Questions and Think Over the Day and Answer Those Questions, If I am Using Pen and Copybook
5. AudioRecord the Questions and Think over those questions and Answer Them.

Step 172 Record, Reflect

1. **Reflection and Review.**
   - **A. Success.**
     - **I. What I have Done Well During Month?**
     - **II. What Have Worked During Month?**
     - **III. Was There an Improvement by 1%, Where was the improvement?**
   - **B. Failure.**
     - **I. What I have Failed During Month?**
     - **II. What have not worked well During Month?**
     - **III. Was there a declined by 1%, where was the decline?**
   - **C. Accountability**
     - **I. Take Accountability for Success and Failure**
   - **D. Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
     - **First, he would learn everything he could about it and prepare physically as best as possible.**
     - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
     - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
     - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
     - **Side note: visualization is great, but it's no substitute for preparation.**

Step 173-Analyse Strength and Weaknesses

1. **Analyse.**
    I. **Find, Study and Analyse My Weakness.**
    II. **Find, Study and Analyse The Opponent Weakness.**
    III. **Find, Study and Analyse My Strengths.**
    IV. **Find, Study and Analyse Opponent Strengths.**
    V. **Work hard on my weaknesses.**
    VI. **Perfect my strengths and work hard on my strengths.**

Step 174-Analyse Opportunities and Threats

1. **Analyse.**
    I. **Find, Study and Analyse My Opportunities.**
    II. **Find, Study and Analyse Opponent Opportunities I gave**
    III. **Find, Study and Analyse The Threats I gave to Opponent**
    IV. **Find, Study and Analyse The Threats the Opponent gave me.**

Step 175-Improvement

1. **Improvement.**
    I. **Find the things I could do better.**
    II. **What First to Improve in Steps of Performance.**
    III. **What to Change for better Performance.**
    IV. **No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**

Step 176-Steps to Take To Do Better and Improve

1. **Steps to Improve.**
    I. **Decide and Prioritise 1-3 Challenges and Problems to improve**
    II. **Steps I will Take To Improve.**
    III. **Look at the improvement over the long period of time, and decide the steps I will take to improve. Look at the improvement as marathon, where you step by step improving.**
    IV. **Take One Step at the time to move forward.**

Step 177-Ideas and Gratitude

1. **Ideas**
    I. **Investigate each Ideas I have.**
    II. **Decide The Ideas To Proceed.**
2. **Gratitude.**
    I. **What I am Thankful for?**
    II. **What is my Gratitude For?**

Part 26: Weekly and Daily Journaling

Step 178-Materials Needed and Listen And Follow Rules of Reading For Weekly and Daily Journaling

1. Organise Materials for Journaling
    - Phone
    - Headphone
    - Pen
    - CopyBook
    - AudioRecorder on The Phone

2. Listen, Follow and Apply Rules of Reading For Journaling and Review of The Day, When Doing Journaling and Review of The Day.
3. Listen, Follow and Apply Books Throughout the Journaling, Reflection, Review, Analyse : How we Think By John Dewey,
4. Write Down Questions and Think Over the Day and Answer Those Questions, If I am Using Pen and Copybook
5. AudioRecord the Questions and Think over those questions and Answer Them.

Step 179- Record, Reflect

1. **Reflection and Review.**
   - **A. Success.**
     - **I. What I have Done Well For A Week, Today?**
     - **II. What Have Worked Within A week, today?**
     - **III. Was There an Improvement by 1%, Where was the improvement?**
   - **B. Failure.**
     - **I. What I have Failed on Weekly, today?**
     - **II. What have not worked well Within a week, today?**
     - **III. Was there a declined by 1%, where was the decline?**
   - **C. Accountability**
     - **I. Take Accountability for Success and Failure**
   - **D. Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
     - **First, he would learn everything he could about it and prepare physically as best as possible.**
     - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
     - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
     - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
     - **Side note: visualization is great, but it's no substitute for preparation.**

Step 180-Analyse Strength and Weaknesses

1. **Analyse.**
    I. **Find, Study and Analyse My Weakness.**
    II. **Find, Study and Analyse The Opponent Weakness.**
    III. **Find, Study and Analyse My Strengths.**
    IV. **Find, Study and Analyse Opponent Strengths.**
    V. **Work hard on my weaknesses.**
    VI. **Perfect my strengths and work hard on my strengths.**

Step 181-Analyse Opportunities and Threats

1. **Analyse.**
    I. **Find, Study and Analyse My Opportunities.**
    II. **Find, Study and Analyse Opponent Opportunities I gave**
    III. **Find, Study and Analyse The Threats I gave to Opponent**
    IV. **Find, Study and Analyse The Threats the Opponent gave me.**

Step 182-Improvement

1. **Improvement.**
    I. **Find the things I could do better.**
    II. **What First to Improve in Steps of Performance.**
    III. **What to Change for better Performance.**
    IV. **No Shortcut. Mastery does not tolerate shortcuts. Shortcuts exist to get better results with the same amount of pain/effort. It can neither scale nor work in the long term. The only way to go beyond your limitations is to do more, and better**

Step 183-Steps to Take To Do Better and Improve

1. **Steps to Improve.**
    I. **Decide and Prioritise 1-3 Challenges and Problems to improve**
    II. **Steps I will Take To Improve.**
    III. **Look at the improvement over the long period of time, and decide the steps I will take to improve. Look at the improvement as marathon, where you step by step improving.**
    IV. **Take One Step at the time to move forward.**

Step 184-Ideas and Gratitude

1. **Ideas**
    I. **Investigate each Ideas I have.**
    II. **Decide The Ideas To Proceed.**
2. **Gratitude.**
    I. **What I am Thankful for?**
    II. **What is my Gratitude For?**

Part 27: Stoic and Stoicism.

Step 185-You Have Required To Do The Work For Stoicism

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
   A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
      I. I have to do the reading.
      II. I have to talk to competent people and understand their arguments.
      III. Never try to be biased toward any of the side, but question both side of the argument.
      IV. Do not support any side, until all the facts are put out there, clear and obvious.
      V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
      VI. I have to think about the key variables and how they interact over time.
      VII. I have to listen and chase down arguments that run counter to your views.
      VIII. I have to think about how you might be fooling yourself.
      IX. I have to see the issue from multiple perspectives.
      X. I have to think.
      XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
      XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
      XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
      XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 186-Use Rules of Reading for Stoicism

1. Listen, Follow and Apply Rules of Reading of Bible Study, Deep Work, Deep Study, Analysis, Syntopicon and Research For Stoicism and Stoic.
    - **A. Skimming:**
        - **I. Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
    - **B. Entertainment**
        - **I. Method 1-Speed Reading. Pages 58-63.**
    - **C. Methods for Basic Knowledge For Deep Work or Bible Study.**
        - **I. Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
        - **II. Method 2-Use 80/20 Principle For Reading. Pages 67.**
        - **III. Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
        - **IV. Method 4-Flip Through Pages and Analyse. Page 69.**
        - **V. Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
        - **VI. Method 6-Devotional Bible Read. Pages 72-73.**
    - **D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading-Complex Text.**
        - **I. Method 1-Chapter Summary Method. Pages 142-146.**
        - **II. Method 2-Character Quality Method. Pages 147-159.**
        - **III. Method 3-Thematic Method. Pages 160-162.**
        - **IV. Method 4-Biographical Method. Pages 163-175.**
        - **V. Method 5-Topical Method. Pages 176-179.**
        - **VI. Method 6-Word Study Method. Pages 180-188.**
        - **VII. Method 7-Book Background Method. Pages 189-193.**
        - **VIII. Method 8-Book Survey Method. Pages 194-204.**

IX. **Method 9-Chapter Analysis Method. Pages 205-214.**
X. **Method 10-Paragraph Study. Pages 215-228.**
XI. **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
XII. **Method 12-Book Synthesis Method. Pages 234-237.**
XIII. **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
XIV. **Method 14-Studying Bible Prophecy. Pages 245-258.**
XV. **Method 15-Typological Study Method. Pages 259-261.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
XVII. **Method 17-Inductive Bible Study Method. Pages 268-295.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
XIX. **Method 19-Theological Group of Principles. Pages 302-305.**
XX. **Method 20- How To Read A Book Pages 306.**

E. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.

I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
II. **Method 22-How To Read A Book For Various Books. Pages 341-599.**
III. **Method 23- Syntopicon Pages 600-641.**
IV. **Method 24-The Craft of Research. Pages 642-881.**
V. **Method 25-Research Books can Be Used. Pages 882-897.**
VI. **Method 26-Investigative Journalism. Pages 898-923.**
VII. **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

2. Apply The Books To Stoicism and Stoic

Step 187-Stoic and Stoicism Books

1. Do not become victim, and looking to be victimise, That the world is owed you everything. World does not owed you anything. Work Hard, Love God, Love Your Country and Embrace Stoicism.
2. Does the Character has died as a Hero, or living long enough to become a villain. There are no Heroes in this world.
3. **Listen, Follow And Apply Rules of Reading Part 1 to 21, before looking into Stoicism and Stoic.**
4. **Listen, Follow and Apply the following Books.**
    A. **Guide to the good life_ the ancient art of Stoic joy.**
    B. **Dialogues and Essays By Seneca.**
    C. Emotion and Peace of Mind_ From Stoic Agitation to Christian Temptation.
    D. A Stoic and Socratic Guide to Life by Epictetus.
    E. Great Books of the Western World By Mortimer Adler.
    F. The Stoic_ Elements of Ethics, Fragments, and Excerpts By Hierocles.
    G. How to be a stoic _ using ancient philosophy to live a modern life By Massimo Pigliucci.
    H. How to Be Free: A Guide To Stoic Life BY Epictetus.
    I. Letter from Stoic By Seneca.
    J. Meditation By Marcus Aurelius.
    K. Meditation on Discipline and Failure By Ferraiolo.
    L. One True Life By Kavin Rowe.
    M. Pursuits of Wisdom_ Six Ways of Life in Ancient Philosophy from Socrates to Plotinus.
    N. Stoic Logic By Benson Mates.
    O. The Philosophy of Cognitive Behavior Therapy: Stoic Philosophy and Rational.
    P. Stoic Pack.
    Q. Stoic Warriors_ The Ancient Philosophy Behind the Military Mind.
    R. Stoicism and Emotion.
    S. Stoicism and the Art of Happiness_ A Teach Yourself Guide.
    T. Stoicism Today_ Selected Writings (Volume Two).
    U. Stoicism a Beginners guide to Stoicism.
    V. Stoic Notes.

W. The Stoics: A fUIDE FOR pERPLEXED.
X. Stoicism.
Y. The Art of Living_ The Stoics on the Nature and Function of Philosophy.
Z. Cambridge Companion to sTOICS.
AA. The Daily Stoic_ 366 Meditations on Wisdom, Perseverance, and the Art of Living
BB. The Little Book of Stoicism_ Timeless Wisdom to Gain Resilience, Confidence, and Calmness.
CC. rOUTLEDGE hANDBOOK TO sTOIC tRADITION.
DD. Sniper Mind.
EE. The Stoic Life_ Emotions, Duties, and Fate.
FF. Stoic Sage.
GG. Stoics On Ambiguity.
HH. The Wisdom of the Stoics_ Selections from Seneca, Epictetus and Marcus Aurelius.
II. The Stoics.

Step 188-Thinking, Logic and Mental Model

1. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Step 189-Journaling

1. **Step 1-So keep a journal. Write your experiences down. When you identify a model at work in the world, write that down too. Then you can explore the applications you've observed, and start being more in control of the models you use every day. For instance, instead of falling victim to confirmation bias, you will be able to step back and see it at work in yourself and others. Once you get practice, you will start to naturally apply models as you go through your life, from reading the news to contemplating a career move. As we have seen, we can run into problems when we apply models to situations in which they don't fit. If a model works, we must invest the time and energy into understanding why it worked so we know when to use**
2. **Visualization- Remember, visualization will never compensate for the work undone. You cannot visualize lies. All the strategies I employ to answer the simple questions and win the mind game are effective because I put in work. It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day, but if you do, you'll find that at the other end of that suffering is a whole other life just waiting for you.**
    - **First, he would learn everything he could about it and prepare physically as best as possible.**
    - **Once the physical prep was done, he'd take care of the mental prep with visualization.**
    - **Since he knew almost everything about his challenge, he visualized what awaited him. He would imagine himself struggling, suffering, and eventually succeeding.**
    - **Preparing himself this way helped him pace his future, and improve the odds of avoiding quitting.**
    - **Side note: visualization is great, but it's no substitute for preparation.**

Step 190-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

Part 28: Learning.

Step 191-Books For Studies

1. **Listen, Follow And Apply Rules of Reading Part 1 to 22, before looking into Learning.**
2. **How To Read A Book By Mortimer Adler for Various Editions**
3. **Listen, Follow and Apply the following Books.**
    A. **How to Study by Ron Fry**
    B. **Learning How to Learn.**
    C. **Learning to Read Critically in Teaching and Learning.**
    D. **Polyglot.**
    E. **The Well Educated Mind.**
    F. **The Well Trained Mind.**
    G. **A Well Educated Mind/**
    H. **Trivium: Liberal Arts of Logic, Grammar and Rhetoric by Miriam Joseph**
    I. **Quadrivium: The Four Classical Liberal Arts of Number, Geometry, Music and Cosmology.**
    J. **Trivium 21 C Preparing Young People For The fUTURE WITH lESSONS fROM THE Past. By Martin Robinson**
    K. **Final Trivium- Learning Skills**
    L. **UltraLearning.**
    M. **Deep Work.**

4. **Listen, Follow and Apply The following Books on Discussion.**
    A. **Tactics By Greg Koukl**
    B. **Tactics and Socratic Method.**
    C. **Socratic Method By Rebecca Cain.**
    D. **Plato Euthyphro**
    E. **Socrates Guide for Preplexed**
    F. **Socrates way.**
    G. **Plato Complete Work.**
    H. **Socratic Method In the classroom.**
    I. **The Power of Socratic Classroom.**
    J. **Thinker Guide to Socratic Questioning.**
    K. **Teaches Like Socrates Guide.**

L. **Socratic method Today.**

5. **Trivium: Listen, Follow and Apply The following Books on Discussion.**
   A. **Grammar**
      - **The Cambridge Grammar of The English Language B Rodney Huddleston.**
      - **Any Grammar that Teaches grammar to children from beginner to Most Advanced.**

   B. **Logic**
      - **A Concise Introduction to Logic By Patrick Hurley**
      - **Any Logic Book that teaches children Logic**
      - **Aristotle on Logic**
      - **Material Logic**
      - **Traditional Logic**
      - **Socratic Logic By Peter Kreeft**

   C. **Rhetoric**
      - **Rhetoric By Aristotle**
      - **On Rhetoric By Aristotle**
      - **Art of Rhetoric By Aristotle**

   D. **Reading**
      - **How To Read A book by Mortimer Adler 1940 Edition**
      - **How to Read A Book by Mortimer aDLER 1966 eDITION**
      - **How To read A Book by Mortimer Adler 1972 Edition**

Step 192-Classical Education Curriculum

Books For Classical Education Curriculum

- **Ambrose Curriculum Guide**
- **Classical Curriculum**
- **Classical Education**
- **ICE_PSE- An Introduction to classical Education**
- **Rhetoric Booklet**
- **The Educational Plan**
- **Trivium**
- **What is Classical Education**
- **How to study**
- **UltraLearning.**
- **Deep Work**

Study in Classical Education For Curriculum:

- **Socratic Questioning, Socratic Method and Socratic Discussion.**
- **Use Plato Dialogue for Socratic Method, Socratic Questioning and Socratic Discussion.**
- **UltraLearning.**
- **Deep Work**
- **Trivium**
    I. **Logic (Aristotelian Logic) and Then Hard Mathematical Logic**
    II. **Grammar**
    III. **Rhetorics**

- **Quadrivium**
    I. **Arithmetic**
    II. **Music**
    III. **Geometry**
    IV. **Astronomy**

- **Fine Art**
    I. **Architecture**
    II. **Sculpture**
    III. **Painting**
    IV. **Literature**
    V. **Music**
    VI. **Performing**
    VII. **Film**

- **Science-Moral**
    I. **Literature**
    II. **History**
    III. **Philosophy**

- **Science- Natural**
    I. **Physical**
    II. **Earth**
    III. **Life**
- **Reason**
- **Critical Thinking, Thinking and Thinking in Models**
- **Classical Language: Latin, Greek, Hebrew, Arabic**
- **Languages: English, Lithuanian, Ukrainian, French, Spanish, Portuguese, Chinese.**
- **Speech-As Parent I need to find a way that My children would stand up and speak in front of other people, and Give them all the tools necessary.**
- **How To Put Ideas into Practice. How The Idea can be put into practice.**

6. **Introduce Alexandra and Adelina to Good Literature:**
    - **Have A Deep Literature Hour with Both of them**
7. **When Reading with Alexandra and Adelina, ask Question:**
    - **What**
    - **Who**
    - **When**
    - **Where**
    - **Why**
    - **How**

- **What does the text Says?**
- **What does the author mean based on text?**
- **Lets try to find what does the author mean by writing this**
- **Use Rules of Reading.**

Step 193 - UltraLearning.

Summary

CHAPTER 1: CAN YOU GET AN MIT EDUCATION WITHOUT GOING TO MIT?

- His friend's advice: ***always have a challenge***

CHAPTER 2: WHY ULTRALEARNING MATTERS

- **Ultralearning**: a strategy for acquiring skills that is both *self-directed* and *intense*
  - Ultralearning is a powerful tool and a small investment
  - Rapidly learning hard skills can have a greater impact than years of mediocre striving on the job
- Your deepest moments of happiness don't come from easy things. They come from realizing your potential and overcoming your own limiting beliefs about yourself
- Medium-skilled technical work is being outsourced overseas or replaced with technology. Only high-skilled jobs and lower-skilled jobs are remaining due to developing technology
  - You need to move to the higher-skilled category where *learning is constant*, or you'll be pushed into the lower skilled category
- Ultralearning can fill in the gaps where higher education does not fill the need in the market and is also *more flexible* to the students lifestyle demands

Reader's note: this reminds me a lot of the argument for learning things quickly and efficiently as referenced in the book Deep Work by Cal Newport

- The best ultralearners are those who blend the practical reasons for learning a skill with an inspiration that comes with something that excites them
  - Learning and growth also *builds your confidence* and brightens your perspective of what's possible

CHAPTER 3: HOW TO BECOME AN ULTRA LEARNER

- What makes ultra learning interesting is also what makes it hard to boil down into step-by-step formulas

Principles of becoming an ultralearner:

1. **Metalearning** – *first draw a map*
2. **Focus** – *sharpen your knife*. Cultivate the ability to concentrate
3. **Directness** – *go straight ahead*
    - Learn by doing the thing you want to become good at
4. **Drill** – *attack your weakest point*
    - Be ruthless in improving your weakest points
5. **Retrieval** – *test to learn*
6. **Feedback**– *don't dodge the punches*
7. **Retention** – *don't fill a leaky bucket*. Understand what you forget and why
8. **Intuition**– *dig deep before building up*
    - Develop through play and exploration of concept and skills. Understand how understanding works
9. **Experimentation** – *explore outside your comfort zone*

CHAPTER 4: PRINCIPLE ONE – METALEARNING: FIRST DRAW A MAP

- **Metalearning** means *learning about learning*, such as how knowledge is structured and acquired within the subject
- People who speak other languages can pick up new languages more quickly
    - Also people who study new languages are more familiar with language acquisition
- Break down metalearning you do for a specific project into three questions:
    - Why
    - What
    - How
- Do your research first. Determine if learning a topic is likely to have a the effect you want it to before you get started
- Two ways to answer “how” you’ll learn something:
    - ***Benchmarking*** – finding the common ways people learn a subject to design a default strategy as a starting point
    - ***Emphasize-exclude method*** – finding the areas most relevant to your learning goals and excluding those that aren’t from your curriculum
- Rule of thumb: invest about 10% of your total expected learning time in research before you get started
- The true benefits of metalearning are long-term

CHAPTER 5: PRINCIPLE TWO – FOCUS: SHARPEN YOUR KNIFE

- In the realm of great intellectual accomplishments, an *ability to focus quickly and deeply* is nearly ubiquitous
- The struggles with focus that people have generally come in three broad varieties:
  - Starting
  - Sustaining
  - Optimizing the quality
- Ultralearners are relentless in coming up with solutions to handle these 3 problems which form the basis of an ability to *focus well* and *learn deeply*

Problem 1: Failing to start focusing a.k.a. Procrastinating

- Make a mental note when you are procrastinating, either recognizing the feeling some *desire to not do a task* or *stronger urge to do something else*
  - Building this awareness is the first step
- Sometimes the worry about the unpleasantness of a task only lasts a few minutes before going away
- One crutch is to get yourself to continue for only 5 minutes
  - After a while, you can utilize the Pomodoro Technique to further improve productivity
    - 1 pomodoro = 25 minute work sessions followed by a 3-5 minute break
    - After 4 pomodoros, take a 15-30 minute break

Problem 2: Failing to sustain focus a.k.a. Getting distracted

- **Flow** is a state of mind where you are in the zone and stop being distracted by interrupting thoughts
  - Your mind becomes *completely absorbed* in the task at hand
  - While flow may be possible in ultralearning, we environment of deliberate practice is not conducive because the difficulty makes flow very difficult
    - Additionally, the self-consciousness that is absent in flow may need to be present in ultralearning and deliberate practice as you need to constantly adjust your approach
  - His advice: ***don't worry about flow***
- Some research says breaking up studying into chunks of different subjects may help with focus
  - A proper balance is needed. *50-60 minutes* is a good length of time for many learning tasks
  - For more concentrated schedules, you can use *several-minute breaks* every hour and split up the different areas in your subject
- Ultimately, however, you need to find what works best for you
- 3 sources that causes focus to break down:
  - *Your environment*
    - Be aware, test your environment, and experiment
  - *Your task*

        - Consider the different tools for learning
        - Consider slight modifications in learning that <u>increase difficulty</u> to make it cognitively harder to zone out
    - *Your mind* – negative emotions, restlessness, daydreaming
        - A clear, calm mind is always best for focusing on all learning problems
        - <u>Dealing with problems</u> may need to be dealt with first
            - For things you cannot control, <u>acknowledge</u> and be aware of your negative feelings, then <u>let it pass</u>

Problem 3: Failing to create the right kind of focus

- This deals with the *quality* and *direction* of your attention
- How you should apply your attention deals with two variables:
    - ***Arousal*** – your overall feeling of energy and alertness
        - This is caused by the sympathetic nervous system activation
        - Mentally, arousal also includes *attention*
        - High arousal creates a feeling of keen alertness, which is often characterized by feeling a narrow focus, but one that can also be somewhat brittle
    - ***Task complexity***
        - More complex tests such as math problems or writing an essay tend to benefit from a *more relaxed* kind of focus
            - The space of focus is often larger and more diffuse
        - This has advantages when an order is the solve the problem you must <u>consider many different inputs and ideas</u>
            - Some tasks may require this *mental quietness*
            - Some particularly creative tasks may benefit from no focus at all and <u>taking a break</u> from the problem to allow for eureka moments
                - This however only occurs when one has <u>focused on a problem for long enough</u> that the breakthrough can occur in a relaxed state
- Consider <u>optimizing your arousal levels</u> to sustain the ideal level of focus
    - ***Complex tasks*** may benefit from *lower arousal*, so working in a quiet room may work
    - ***Simpler tasks*** might benefit from a *noisier environment* like working at a coffee shop

CHAPTER 6: PRINCIPLE THREE – DIRECTNESS: GO STRAIGHT AHEAD

- **Directness** is the hallmark of most ultralearning projects
    - His example approach is to show that the learning activities are always *done in connection to the context* in which the skills learned will eventually be used
    - The easiest way to learn directly this is simply do the thing you want to get good at
        - This won't work for all projects, but it is something you can gradually increase to improve your performance
- Studies over decades show that general transfer of knowledge in one area into another doesn't exist and general discipline as a muscle is not a valid concept
    - However, one researcher says the ***transfer*** is paradoxical
        - "When we want it, we don't get it. Yet it occurs all the time"
        - Transfer tends to be harder when our knowledge is more limited
            - As we develop more knowledge and skill in one area, they become more flexible and easier to apply outside the narrow context which they were learned
            - His own hypothesis as an explanation for the transfer problem: *most formal learning is woefully indirect*
- Initial learning efforts often stick stubbornly to the *situations we learn them in*
    - The problem is that learning directly is hard
    - It is often more frustrating, challenging, and intense than reading a book or attending a lecture
        - But this very difficulty creates a potential source of *competitive advantage* for any would-be ultralearner

Learning Tactics

- Tactic 1: *project-based learning*
- Tactic 2: *immersive learning*
- Tactic 3: *the flight simulator method*
- Tactic 4: *the overkill approach*
    - Put yourself in an environments where the *demands will be extremely high* so you're unlikely to miss any important lessons or feedback

CHAPTER 7: PRINCIPLE FOUR – DRILL: ATTACK YOUR WEAKEST POINT

- Benjamin Franklin's mastery of writing is what made him great
    - It was how he practice, the way he decided to *break apart the skill of writing* and *practiced its elements in isolation* which allowed him to apply this mastery to other pursuits
- There are ***rate-determining steps*** in learning anything that acts as a bottleneck and determines your overall performance
    - **Drills** allow you to improve these rate-determining step in isolation which will improve your overall performance
- A ***direct-then-drill approach*** is first trying to practice a skill directly, then analyze the direct skill and try to isolate components that are either rate-determining steps in your performance, or sub-skills you find difficult to improve because there are too many other things going on for you to focus on them
    - The final step is to go back to direct practice and integrate what you've learned

Drills

- Drill 1: *Time slicing* – Isolate a slice in time of the longer sequence of actions
- Drill 2: *Cognitive components*
- Drill 3: *The copycat* – Copy the aspects you don't want to drill so that you can isolate the aspects you do, such as copying a painting from someone else but practicing one aspect component
- Drill 4: *The magnifying glass method* – spend more time on one component of the scale than you would otherwise
- Drill 5: *Prerequisite chain* – start on hard skills and learn prerequisite foundational skills as needed, which saves time from learning sub skills that don't drive performance

Reader's note: this section of drilling reminds me of the idea of removing the bottleneck to improve the overall performance of a system from the book The Goal by Eliyahu Goldratt

- Drilling is difficult, but something *mentally strenuous provides a greater benefit* to learning than some thing easy

CHAPTER 8: PRINCIPLE FIVE – RETRIEVAL: TEST TO LEARN

- Study showed *testing yourself*, trying to retrieve information without looking at the text, aka ***free recal***l or ***self-testing***, clearly outperformed both simple review and concept mapping methods
    - This might be because:
        1. You get feedback
        2. Self-testing is more directly related to actual testing and therefore transfer is more likely
- Increasing the difficulty and testing yourself way *before you are ready* is more efficient compared to low-intensity learning strategies which involve less or easier retrieval
    - Giving a test later when information is not top of mind improves retention because it is more difficult
    - However, testing too late so that you forgotten the information entirely is not beneficial
        1. You need to find a good midpoint
- The concept of ***forward retrieval*** is that early testing may help for retrieval later on for information not yet learned
- Nearly any fact or concept is now available to anyone with a smart phone. However this hasn't made the modern person thousands of times smarter than before
    - Being able to look things up is certainly an advantage, but without a certain amount of knowledge inside your head, it doesn't help you solve hard problems

Useful methods to apply retrieval to almost any subject

1. *Flashcards*
2. *Free recall*
3. *The question book method* – rephrase your recorded notes as questions to be answered later
    - What's harder and more useful is to restate the big idea of a chapter or section as a question because it requires deeper thinking
4. *Self-generated challenges*
5. *Closed book learning*

CHAPTER 9: PRINCIPLE SIX – FEEDBACK: DON'T DODGE THE PUNCHES

- The ability to gain immediate feedback on one's performance is an essential ingredient in reaching expert levels of performance
- The type of feedback is important
    - Feedback works well when it provides useful information that can guide future learning such as what you were doing wrong and how you can fix it
    - However, feedback often backfires when it is *aimed at a persons ego*
        - ***Praise***, for example, is usually harmful to further learning
            - When feedback steers into an evaluation of you as an individual, it usually has a *negative impact on learning*
- Ultralearners need to be sensitive to what feedback that is actually useful and tune out the rest
- ***Fear of feedback*** often feels more uncomfortable than experiencing the feedback itself
    - It is not so much negative feedback on its own that can impede progress, but the fear of hearing criticism that causes us to shut down
    - Sometimes the best action is to dive straight into the hardest environment which can reduce your fears of getting started initially
        - It will allow you to adjust accordingly if the feedback is too harsh to be useful
- Three types of feedback:
    - *Outcome feedback*
    - *Informational feedback*
    - *Corrective feedback*
- **Outcome feedback** tells you how you are doing overall, but not what you're doing right or wrong, why, or how to improve
- **Informational feedback** can tell you what you are doing wrong, but not how to fix it
    - This is easy to obtain when you can get live, real time feedback like an audience's reaction
- **Corrective feedback** is the best type of feedback because it can show you what you're doing wrong and how to fix it
    - This type is typically only available through a coach, mentor, or teacher, or certain studying tools
- The best ***feedback*** is *informative* and *usable* by the student who receives it
    - Optimal feedback *indicates the difference between the current state and the desired state*, and helps students *take a step to improve their learning*
- Research shows that *immediate feedback* is superior in regards to timing
- Trying to avoid situations that always make you feel good or bad about your performance
    - Sometimes is the easiest way to improve feedback ss simply to get a lot more of it a lot more often
- Though short-term feedback can be stressful, once you get into the habit of receiving it, it becomes easier to process without overreacting emotionally

CHAPTER 10: PRINCIPLE SEVEN – RETENTION: DON'T FILL A LEAKY BUCKET

- ***Memory*** is essential to learning things well
    - In terms of memory, *our minds are a leaky bucket*
        - But most of the holes are at the top so the water that remains at the bottom leaks out more slowly
        - We tend to forget information quickly but then it tapers off after a while
- Four mechanisms of retention:
    - Spacing
    - Proceduralization
    - Overlearning
    - Numonics
- **Spacing** learning sessions over more intervals across a longer periods of time helps with *long-term retention*, though lower performance in the short-term because of forgetting
    - Another strategy for applying spacing is to semi-regularly do refresher projects
- ***Procedural information*** tends to be stored for much longer so it may benefit to you practice a core set of information instead of everything evenly
    - Not all skills can become automatic and proceduralized
- **Overlearning** is additional practice beyond what is required to perform adequately which can *increase the length of time* that memory is stored
- **Numonics** – a picture retains 1000 words
    - Book reference: Moonwalking with Einstein by Joshua Foer

CHAPTER 11: PRINCIPLE EIGHT – INTUITION: DIG DEEP BEFORE BUILDING UP

Useful guidelines for doing things differently:

1. *Rule one*: don't give up on hard problems easily
2. *Rule two*: prove things to understand them. Working through things yourself can help you develop the capacity for deep intuition
3. *Rule three*: always start with a concrete example
4. *Rule four*: don't fool yourself. Explaining things clearly and asking dumb questions can keep you from fooling yourself into thinking you know something you don't

- **The Feynman Technique**:
    - First, write down the problem or concept you want to understand at the top of the paper
    - Second, in the space below, explain the idea as if you had to teach it to someone else or convey the idea to someone who's never heard of it
        - Explain how to solve it and why the procedure makes sense
    - Third, when you get stuck and your understanding fails to provide a clear answer, go back to your reference material to find your answer

Reader's note: This concept is just like teaching in order to understand and learn better

CHAPTER 12: PRINCIPLE NINE – EXPERIMENTATION: EXPLORE OUTSIDE YOUR COMFORT ZONE

- ***Variation*** is important to finding style or method that works for you
  - Find one that will take advantage of your strengths and diminish your weaknesses, just like what Van Gogh did
  - *Aggressive exploration* and *tenacity* we're also key to Van Gogh's success
- ***Experimentation*** is the key to mastery
  - As you approach mastery, many skills reward *proficiency* as well as *originality*
  - As ***creativity becomes valuable, experimentation becomes essential***
- Three types of experimentation:
  - Experimenting with *learning methods*, *materials*, and *resources*
  - Experimenting with *technique*
  - Experimenting with *style*
- The key to experimenting with different styles is to be aware of all the different styles that exist

The mindset to experimentation

- Experimentation requires a ***growth mindset***, as referenced by psychologist Carol Dweck
  - Book reference: Mindset by Carol Dweck
- How to experiment:
  - *Copy then create*
  - *Compare methods side-by-side*
  - *Introduce new constraints* – The best innovations come from working within constraints
  - *Find your superpower in the hybrid of unrelated skills*
  - *Explore the extremes*

CHAPTER 13: YOUR FIRST ULTRALEARNING PROJECT

- **Step one**: do your research
    - Ultralearning “packing” checklist:
        1. What *topic* you’re going to learn and it’s *approximate scope*. He suggest starting with a narrow scope and expanding it as needed
        2. The *primary resources* you’re going to use
        3. A *benchmark* for how others I have successfully learned this skill or subject
        4. Direct practice *activities*
        5. Back up *materials* and *drills*
- **Step two**: schedule your time
    - Consistency breeds good habits, reducing the effort required to study
- **Step three**: execute it
- **Step four**: review your results
- **Step five**: choose to maintain or master what you’ve learned
    - If you want to maintain your skills, schedule in time to practice it every so often or try to integrate your new skills into your life somehow
    - Sometimes the *cost of re-learning a skill* is smaller than the cost of keeping it continuously sharp
        1. One reason may be you might have learned more than you actually need. Also, *re-learning* is generally easier than first time learning

Alternatives to ultralearning: Low intensity habits and formal instruction

- Being an ultralearner doesn’t imply that everything one learns has to be done in the most aggressive and dramatic fashion possible
- Two main alternative strategies to ultralearning to see how they fit into a *bigger picture of lifelong learning*
- Alternative strategy one: **low intensity habits**
    - These work well when engaging in *learning is spontaneous*, *frustration level is low*, and *learning is automatically rewarding*
    - ***Enjoyment*** tends to come from being good at things. Once you feel competent in a skill, it starts to get a lot more fun
        - Therefore, he thinks pursuing aggressive ultralearning projects is often the surer way to *enjoy learning more* as you’re more likely to reach a level where learning automatically becomes fun
- Alternative strategy two: **formal, structured education**
    - The benefits of formal structured education is it allows you to interact with people in groups and with teachers or mentors

CHAPTER 14: AN UNCONVENTIONAL EDUCATION

- Psychologists recognize large difference between goals ***pursued intrinsically*** based on their own decisions, interests, and targets, and goals that they ***pursue extrinsically*** pushed by overbearing parents, punishing curricula, or demanding employers
    - The latter type, because the motivation for conforming to them comes primarily from *outside social pressures* are the cause of much misery

How to raise an Ultralearner

- László Polgár, the man who raised his three daughters to be chess geniuses, outlined in his book how to turn any normal, healthy child into a genius
    - Book reference: Bring Up Genius! (Nevelj zsenit!) by László Polgár
- First step is to start early
    - Education should begin no later than three, and specialization to begin no later than six
    - There is evidence from other fields that children's brains are more plastic and flexible when younger
- The second step is to specialize
    - Even though the girls learned mathematics, language, sports, and other subjects, their focus was always in chess
        - Here they played 5 to 6 hours per day
    - By specializing in one subject, the children could reach proficiency at an early age
        - Winning against older and more experienced opponents in chess with build their self-confidence and competitive spirit so that they actively wanted to practice more to improve themselves
- The third step was to make practice into play
    - Keeping the game *fun and light* was a key steppingstone to developing a drive and self-confidence that would support more serious effort later
    - However, he insisted that "play is not the opposite of work, and a child does not need play separate from work, but meaningful action"
- Fourth, he was careful to create positive reinforcement, to make chess a pleasant rather than frustrating experience
    - Failure, suffering, and fearfulness decreased achievement
- Lastly, he was against coercive learning
    - *Self-discipline, motivation, and commitment* must come from the children themselves
        - One can never achieve serious pedagogical results especially at a high-level through coercion
        - ***One of the most important educational tasks is to teach self-education***
- In the beginning, you can start with projects that are more unique until your skill level and self confidence builds up
    - When your skill increases, you can challenge yourself and create a competitive environment
- In the workplace, make learning a priority and create a culture of learning

- ***Learning*** isn't about replacing ignorance with understanding. Ignorance expands with knowledge
    - ***Greater knowledge comes a greater appreciation for all the qualities that remain unanswered***
- Confidence must be pared with great humility

Full Book of ULTRALEARNING

Chapter 3- How Become UltraLearner.

“I’d love to be a guinea pig.” It was an email from Tristan de Montebello. I had first met the charming, half-French, half-American musician and entrepreneur seven years earlier, at almost exactly the same time as my fateful encounter with Benny Lewis. With tousled blond hair and a closecropped beard, he looked like he belonged on a surfboard on some stretch of California coastline. De Montebello was the kind of guy you liked immediately: confident, yet down to earth, with only the vaguest hints of a French accent in his otherwise perfect English. Over the years, we had kept in touch: me with my strange learning experiments; him hopping around the world, going from working with a Parisian startup that made bespoke cashmere sweaters to guitarist, vagabond, and eventually web consultant in Los Angeles, much closer to the beaches that suited him so well. Now he had heard I was writing a book about learning, and he was interested.

The context of his email was that although I had met and documented dozens of people accomplishing strange and intriguing learning feats, the meetings had been largely after the fact. They were people I had met or heard about after their successes, not before; observations of successes, not experiments that generated them. As a result, it was hard to tell exactly how accessible this ultralearning thing was. If you filter through enough pebbles, you’re sure to find a few flecks of gold. Was I doing the same thing, scouring for unusual learning projects? Sift through enough people, and you’re bound to find some that seem incredible. But if ultralearning had the potential that I imagined it did, it would be nice to find someone before he or she tried a project and watch the results. To test this, I put together a small group of about a dozen people (mostly readers of my blog) who were interested in giving this ultralearning thing a shot. Among them was de Montebello.

Becoming an Ultralearner

“Maybe piano?” de Montebello suggested. Although he was interested in the concept of ultralearning, he had no idea which skill he’d like to learn. He had played guitar and been the lead singer for a band. With his musical background, learning to play piano seemed like a relatively safe choice. He had even made a course teaching guitar lessons online, so learning another musical instrument could potentially expand his business. Selfishly, I encouraged him to try learning something farther outside his comfort zone. A musician picking up another instrument didn’t seem like the ideal case to study for seeing whether ultralearning could be applied broadly. We threw more ideas around. A week or two later, he decided on public speaking. His background as a musician had given him experience being onstage, but otherwise he had little experience giving speeches. Public speaking is a useful skill, too, he argued, so it would be worth getting better at even if nothing noteworthy came from the effort.

De Montebello had a private motivation for wanting to become good at public speaking. He had given only a handful of speeches in his life, and most of those had been in college. He related to me one example, from when he had gone to give a talk to a dozen people at a web design firm in Paris: “I cringe every time I think back to that.” He explained, “I could just tell I wasn’t connecting. There were many pieces where I was boring them. There

were jokes where I would laugh, because I thought it was funny, but nobody else would." Being a musician, he was surprised "how little of it translated" to public speaking. Still, it was something in which he saw potential value, if he could get good at it. "Public speaking is a metaskill," he feels. It's the kind of skill that assists with other skills: "confidence, storytelling, writing, creativity, interviewing skills, selling skills. It touches on so many different things." With that in mind, he set to work.

First Steps of a Fledgling Ultralearner

De Montebello had picked his topic, but he wasn't sure exactly how he should learn it. He decided to attend a meeting of Toastmasters International, the organization for learning public speaking. At that point, his story had two doses of luck. The first was that in attendance at the very first meeting for his public speaking project was Michael Gendler. Gendler was a longtime Toastmaster, and de Montebello's combination of charm and obsessive intensity to become good at public speaking convinced him to help coach de Montebello through his project. The second dose of luck was something that de Montebello didn't fully appreciate at the time: he had showed up just ten days before the deadline to be eligible to compete in the World Championship of Public Speaking.

The World Championship of Public Speaking is a competition put on annually by Toastmasters in which members compete, elimination style, starting in individual clubs and going on to larger and larger units of the organization, until a select few make it to the final stage. De Montebello had little more than a week to prepare. Still, the competition provided a potential structure for his ultralearning project, so he went for it, cranking out the six mandatory qualifying speeches in the coming week, finishing the last in the nick of time.

De Montebello practiced obsessively, sometimes speaking twice in one day. He recorded a video of every speech and analyzed it obsessively for flaws. He asked for feedback every time he gave a speech, and he got plenty of it. His coach, Gendler, pushed him far outside of his comfort zone. Once, when faced with the choice between polishing an existing speech and creating a brand-new one from scratch, de Montebello asked what he should do. Gendler's response was to do whichever was scariest for him.

His relentless drive pushed de Montebello into unusual places. He took improv classes to work on his spontaneous delivery. There he learned to trust whatever was in his head and deliver it without hesitation. That kept him from stammering over his words or fearing freezing up onstage. He talked to a friend who works as a Hollywood director to give feedback on his delivery. The director taught de Montebello to give his speech dozens of times in different styles—angry, monotone, screaming, even as a rap—then go back and see what was different from his normal voice. According to de Montebello, that helped break him of the "uncanny valley" that happened when his normal speaking delivery felt slightly unnatural.

Another friend with a background in theater gave him tips on stage presence. He took de Montebello through his speech and showed how each word and sentence indicated movement that could be translated to where he moved on the stage. Instead of standing constricted under the spotlight, de Montebello could now move gracefully and use his body to communicate his message on top of his words. He even gave his speech at a middle school, knowing that seventh graders would give the most ruthless feedback of all. After bombing terribly outside the comfort of Toastmasters, he learned to talk

to his audience before going onstage: learn their language and emotions and connect with them. That way, applying all he had learned so far, he could change his speech on the fly, so it would be sure to connect with a new audience. Above all, Gendler pushed him relentlessly. “Make me care,” Gendler told him after listening to one of de Montebello’s speeches. “I understand why this is important to you, but the audience doesn’t care about you. You have to make me care.” Diverse advice and voluminous practice would soak those lessons in deeply, allowing de Montebello to quickly surpass his early awkwardness on the stage.

After a month, de Montebello won his area competition, beating out a competitor with two decades of experience in Toastmasters. He won his district and division competitions, too. Finally, less than seven months after he first tried his hand at public speaking, he was going to compete in the World Championships. “There are about thirty thousand people who compete every year,” he noted, adding “I’m pretty confident I’m the fastest competitor in history to make it this far, since if I had started ten days later, I couldn’t have competed.” He made it into the top ten.

From Semifinalist to Career Change

“I knew this project was going to be big for me when I started it,” de Montebello told me months after his top ten placement in the international competition. “But it was literally life changing. I didn’t expect it to actually change my life.” Reaching the final competition in the World Championship had been quite a journey, but it was only afterward that he began to realize how much he had learned. “I was learning for this very narrow world of public speaking. It was only after that I realized the depth of all these skills I had worked so much on: storytelling, confidence, communicating.”

Friends who heard of de Montebello’s success started asking if he could help them work on their own speeches. He and Gendler saw an opportunity to help others improve their public speaking skills. The demand was intense. Authors who command five-figure speaking fees started to approach the duo to see if they could be taught to improve their public speaking the ultralearning way. Soon they had landed their first client, to the tune of twenty thousand dollars. Gendler and de Montebello weren’t mercenary; they wanted to focus only on speakers whose message they really believed in. But the fact that they had attracted such high-status clients certainly helped persuade them to make the switch into coaching public speaking full-time. Gendler and de Montebello even decided to name their consultancy UltraSpeaking, as a nod to the strategy that made it all possible.

De Montebello’s story ended up being much more dramatic than either of us had initially expected. His initial hope had been that he could practice intensely for a few months, deliver a great speech somewhere, and have it recorded—a nice memento and a new skill—but not that he would reach the status of an international competitor and eventually experience a complete career change. Of the other dozen or so people I spent some time coaching into ultralearning, none offered so dramatic an example. Some dropped out. Life got in the way (or perhaps revealed that they weren’t actually as committed as they had initially appeared to be). Others had respectable successes, making significant improvements in learning medicine, statistics, comic book drawing, military history, and yoga, even if they didn’t reach de Montebello’s degree of success.

What differentiated de Montebello wasn’t that he thought he could go from near-zero experience to the finalist for the World Championship in six

months. Rather, it was his obsessive work ethic. His goal wasn't to reach some predetermined extreme but to see how far he could go. Sometimes you'll get lucky and embark on a path that will take you quite far. But even the failure mode of ultralearning is usually that you will learn a skill fairly well. Even those who didn't have such dramatic results among the small group I spent time coaching, those who stuck with their project still ended up learning a new skill they cared about. You may not compete in world championships or completely switch careers, but as long as you stick with the process, you're bound to learn something new. What de Montebello's example encapsulated for me was not only that you can become an ultralearner but that such successes are far from being the inevitable consequences of having a particular kind of genius or talent. Had de Montebello focused on piano instead, his experience with giving speeches would probably have remained that one awkward example from his days in Paris.

Principles of Becoming an Ultralearner

De Montebello's story illustrates that it's possible to decide to become an ultralearner. But ultralearning isn't a cookie-cutter method. Every project is unique, and so are the methods needed to master it. The uniqueness of ultralearning projects is one of the elements that ties them all together. If ultralearning could be bottled or standardized, it would simply be an intense form of structured education. What makes ultralearning interesting is also what makes it hard to boil down into step-by-step formulas.

This is a difficult challenge, but I'm going to try to sidestep it by focusing on principles first. Principles allow you to solve problems, even those you may have never encountered before, in a way that a recipe or mechanical procedure cannot. If you really understand the principles of physics, for instance, you can solve a new problem simply by working backward. Principles make sense of the world, and even if they don't always articulate exactly how you should solve a particular challenge, they can provide immense guidance. Ultralearning, in my view, works best when you see it through a simple set of principles, rather than trying to copy and paste exact steps or protocols.

The principles of ultralearning are going to be the focus of the second part of this book. In each chapter, I'll introduce a new principle, plus some evidence to back it up both from ultralearning examples and from scientific research. Finally, I'll share possible ways that the principle can manifest itself as specific tactics. These tactics are only a small sample. But they should provide a starting point for you to think creatively about your own ultralearning challenges.

There are nine universal principles that underlie the ultralearning projects described so far. Each embodies a particular aspect of successful learning, and I describe how ultralearners maximize the effectiveness of the principle through the choices they make in their projects. They are:

1. METALEARNING: FIRST DRAW A MAP. Start by learning how to learn the subject or skill you want to tackle. Discover how to do good research and how to draw on your past competencies to learn new skills more easily.
2. FOCUS: SHARPEN YOUR KNIFE. Cultivate the ability to concentrate. Carve out chunks of time when you can focus on learning, and make it easy to just do it.
3. DIRECTNESS: GO STRAIGHT AHEAD. Learn by doing the thing you want to

become good at. Don’t trade it off for other tasks, just because those are more convenient or comfortable.
4. DRILL: ATTACK YOUR WEAKEST POINT. Be ruthless in improving your weakest points. Break down complex skills into small parts; then master those parts and build them back together again.
5. RETRIEVAL: TEST TO LEARN. Testing isn’t simply a way of assessing knowledge but a way of creating it. Test yourself before you feel confident, and push yourself to actively recall information rather than passively review it.
6. FEEDBACK: DON’T DODGE THE PUNCHES. Feedback is harsh and uncomfortable. Know how to use it without letting your ego get in the way. Extract the signal from the noise, so you know what to pay attention to and what to ignore.
7. RETENTION: DON’T FILL A LEAKY BUCKET. Understand what you forget and why. Learn to remember things not just for now but forever.
8. INTUITION: DIG DEEP BEFORE BUILDING UP. Develop your intuition through play and exploration of concepts and skills. Understand how understanding works, and don’t recourse to cheap tricks of memorization to avoid deeply knowing things.
9. EXPERIMENTATION: EXPLORE OUTSIDE YOUR COMFORT ZONE. All of these principles are only starting points. True mastery comes not just from following the path trodden by others but from exploring possibilities they haven’t yet imagined.

I organized these nine principles based on my observations of ultralearning projects as well as my own personal experience, referencing, where I could, the vast cognitive science literature. I started with the ultralearners themselves. If one person did something in a certain way, that might be an interesting example, but it might also be an idiosyncrasy of that person. If several people or, better yet, every ultralearner I encountered, did a certain thing in a certain way, it was much stronger evidence that I had stumbled upon a general principle. I then checked those principles against the scientific literature. Are there mechanisms and findings from cognitive science to support the tactics I saw? Better yet, have there been controlled experiments comparing one approach to learning with another? The scientific research supports many of the learning strategies employed by the ultralearners I witnessed. This suggests that ultralearners, with their ruthless focus on efficiency and effectiveness, may have landed on some universal principles in the art of learning.

Beyond principles and tactics is a broader ultralearning ethos. It’s one of taking responsibility for your own learning: deciding what you want to learn, how you want to learn it, and crafting your own plan to learn what you need to. You’re the one in charge, and you’re the one who’s ultimately responsible for the results you generate. If you approach ultralearning in that spirit, you should take these principles as flexible guidelines, not as rigid rules. Learning well isn’t just about following a set of prescriptions. You need to try things out for yourself, think hard about the nature of the learning challenges you face, and test solutions to overcome them. With that in mind, let’s turn to the first ultralearning principle: metalearning.

Chapter 4- Principle 1- Metalearning: First Draw A Map

Dan Everett stands in front of a packed auditorium. A stocky man in his early sixties, he speaks slowly and confidently, his smiling face framed by thinning blond hair and a beard. Next to him is a table filled with assorted objects: sticks, stones, leaves, containers, fruit, a pitcher of water. He signals that the demonstration is about to begin.

Entering from a door on the right, a heavyset middle-aged woman with dark brown hair and olive skin approaches the stage. Everett goes up to her and says something in a language she doesn't understand. She looks around, clearly confused, and then replies hesitantly, "Kuti paoka djalou."1 He tries to repeat what she has just said. There's some stumbling at first, but after one or two more tries, she seems satisfied with his repetition of her reply. He goes to the blackboard and writes, "Kuti paoka djalou ⇨ 'Greeting (?).'" Next he picks up a small stick and points to it. She guesses correctly that he wants to know the name and replies, "ŋkindo." Once again, Everett goes to the blackboard and writes, "ŋkindo ⇨ stick." Next he tries two sticks and gets the same response, "ŋkindo." He then drops the stick, to which the woman says, "ŋkindo paula." The demonstration proceeds, with Everett picking up objects, performing actions, listening to the woman's responses, and recording the results on the blackboard. Soon he's moved past simple naming tasks and starts asking for more complicated sentences: "She drinks the water," "You eat the banana," and "Put the rock in the container." With each new elicitation, he experiments, building new sentences and testing her reaction to see if he is correct. Within half an hour, there are more than two blackboards full of nouns, verbs, pronouns, and phonetic annotations.

Learning dozens of words and phrases in a new language is a good start for the first thirty minutes spent with any language. What makes this feat particularly impressive is that Everett isn't allowed to speak any language he might have in common with the speaker.2 He can only try to encourage her to say words and phrases and repeat them to try to figure out the language's grammar, pronunciation, and vocabulary. He doesn't even know what language is being spoken.*

How can Everett start speaking a new language from scratch, without teachers or translations or even knowing what language he's learning, in half an hour, when most of us struggle to do the same after years of high school Spanish classes? What enables Everett to pick up vocabulary, decode grammar, and pronunciation so much faster than you or I, even with all those additional constraints? Is he a linguistic genius, or is there something else going on?

The answer is our first principle of ultralearning: metalearning.

What Is Metalearning?

The prefix meta comes from the Greek term μετά, meaning "beyond." It typically signifies when something is "about" itself or deals with a higher layer of abstraction. In this case metalearning means learning about learning. Here's an example: If you're learning Chinese characters, you will learn that 火†means "fire." That's regular learning. You may also learn that Chinese characters are often organized by something called radicals, which indicate what kind of thing the character describes. The character 灶, for example which means "stove," has a 火†on the left-hand side to indicate that it has some relationship to fire. Learning this property of Chinese characters is

metalearning—not learning about the object of your inquiry itself, in this case words and phrases, but learning about how knowledge is structured and acquired within this subject; in other words, learning how to learn it.
In Everett's case, we can see glimpses of the enormous wealth of metalearning that lies just beneath the surface. "Well, what are some of the things we noticed about this?" Everett asks the audience after his brief demonstration has concluded, "It seems to be SVO, a subject-verb-object language, that's not terribly shocking." He continues, "There doesn't seem to be any plural marking on the nouns, unless it's tones and I missed it. . . . There's clearly pitch going on here; whether it's tone remains to be analyzed." From this jargon we can see that when Everett evokes a word or phrase from his interlocutor, he isn't just parroting back the sounds; he's drawing a map with theories and hypotheses about how the language works grounded on years of experience learning languages.
In addition to his enormous wealth of knowledge as a linguist, Everett has another trick that gives him an enormous advantage. The demonstration he has presented is not his own invention. Called a "monolingual fieldwork" demonstration, this method was first developed by Everett's teacher Kenneth Pike as a means of learning indigenous languages. The method lays out a sequence of objects and actions that the practitioner can use to start piecing together the language. This method even received some Hollywood exposure after Louise Banks, a fictional linguist, used it to decode an alien language in the 2016 science fiction movie Arrival.
These two pieces in Everett's linguistic arsenal—a richly detailed map of how languages work and a method that provides a path to fluency—have allowed Everett to accomplish a lot more than just learning some simple sentences. Over the last thirty years he has become one of only a handful of outsiders to become fluent in Pirah , one of the most unusual and difficult languages on the planet, spoken only by a remote tribe in the Amazon jungle.[3]

The Power of Your Metalearning Map

Everett's case beautifully illustrates the power of using metalearning to learn new things faster and more effectively. Being able to see how a subject works, what kinds of skills and information must be mastered, and what methods are available to do so more effectively is at the heart of success of all ultralearning projects. Metalearning thus forms the map, showing you how to get to your destination without getting lost.
To see why metalearning is so important, consider one study on the helpful effects of already knowing a second language when learning a third.[4] The study took place in Texas, where monolingual English speakers and bilingual Spanish/English speakers were enrolled in a French class. Follow-up on subsequent tests showed that the bilingual speakers outperformed the monolingual students when learning a new language. On its own, this isn't terribly surprising. French and Spanish are both Romance languages, so there are shared features of grammar and vocabulary that aren't present in English that could conceivably provide an advantage. More interesting, however, is that even among the Spanish/English bilinguals, those who also took Spanish classes ended up doing better when they later needed to learn French. The reason seems to be that taking classes assists with helping form what the study authors call metalinguistic awareness in a way that simply knowing a language informally does not. The difference between the two types of bilingual speakers mostly came down to metalearning: one group had content

knowledge of the language, but the group that took classes also had knowledge about how information in a language is structured.*
Nor is this idea about metalearning restricted to languages. Linguistic examples are often easier to study because there's a cleaner separation of metalearning and regular learning. This is because the contents of unrelated languages, such as vocabulary and grammar, are often quite different, even if the metalearning structure is the same. Learning French vocabulary won't help you much with learning Chinese vocabulary, but understanding how vocabulary acquisition works in French will likely also help with learning Chinese. By the time my friend and I had reached the last country in our year of learning languages, the process of immersing ourselves and learning a new language from scratch was practically a routine. The words and grammar of Korean may have been completely new, but the process of learning was already well trodden. Metalearning exists in all subjects, but it can often be harder to examine independently from regular learning.

How to Draw Your Map

Now that you have some idea what metalearning is and its importance to learning faster, how can you apply this to get an edge in your own learning efforts? There are two main ways: over the short term and over the long term.
Over the short term, you can do research to focus on improving your metalearning before and during a learning project. Ultralearning, owing to its intensity and self-directed nature, has the opportunity for a lot higher variance than normal schooling efforts do. A good ultralearning project, with excellent materials and an awareness of what needs to be learned, has the potential to be completed faster than formal schooling. Language learning through intensive immersion can beat lengthy classes. Aggressively paced coding bootcamps can get participants up to a level where they can compete for jobs much faster than those with a normal undergraduate degree. This is because you can tailor your project to your exact needs and abilities, avoiding the one-size-fits-all approach taken in school. However, there's also a danger of choosing unwisely and ending up much worse off. Metalearning research avoids this problem and helps you seek out points where you might even be able to get a significant advantage over the status quo.
Over the long term, the more ultralearning projects you do, the larger your set of general metalearning skills will be. You'll know what your capacity is for learning, how you can best schedule your time and manage your motivation, and you'll have well-tested strategies for dealing with common problems. As you learn more things, you'll acquire more and more confidence, which will allow you to enjoy the process of learning more with less frustration.
In this chapter, I'm going to devote most of the next section to short-term research strategies, since they will probably benefit you the most. However, this emphasis shouldn't undermine the importance of the long-term effects of metalearning. Ultralearning is a skill, just like riding a bicycle. The more practice you get with it, the more skills and knowledge you'll pick up for how to do it well. This long-term advantage likely outweighs the short-term benefits and is what's easiest to mistake for intelligence or talent when seen in others. My hope is that as you get more practice in ultralearning, you'll start to automatically apply many of those skills to learn faster and more effectively.

Determining Why, What, and How

I find it useful to break down metalearning research that you do for a specific

project into three questions: “Why?,” “What?,” and “How?” “Why?” refers to understanding your motivation to learn. If you know exactly why you want to learn a skill or subject, you can save a lot of time by focusing your project on exactly what matters most to you. “What?” refers to the knowledge and abilities you’ll need to acquire in order to be successful. Breaking things down into concepts, facts, and procedures can enable you to map out what obstacles you’ll face and how best to overcome them. “How?” refers to the resources, environment, and methods you’ll use when learning. Making careful choices here can make a big difference in your overall effectiveness. With these three questions in mind, let’s take a look at each of them and how you can draw your map.

Answering “Why?”

The first question to try to answer is why are you learning and what that implies for how you should approach the project. Practically speaking, the projects you take on are going to have one of two broad motivations: instrumental and intrinsic.

Instrumental learning projects are those you’re learning with the purpose of achieving a different, nonlearning result. Consider the previously mentioned case of Diana Fehsenfeld, who, after a few decades as a librarian, found that her job was becoming obsolete. Computerized file systems and budget cuts meant she would need to learn new skills to stay relevant. She did some research and decided that the best way to do this would be to get a firmer grasp on statistics and data visualization. In this case, she wasn’t learning because of her deep love of statistics and data visualization but because she believed that doing so would benefit her career.

Intrinsic projects are those that you’re pursuing for their own sake. If you’ve always wanted to speak French, even though you’re not sure how you’ll use it yet, that’s an intrinsic project. Intrinsic doesn’t mean useless. Learning French might have benefits later when you decide to travel or need to work with a client from France at your job. The difference is that you’re learning the subject for its own sake, not as a means to some other outcome.

If you’re pursuing a project for mostly instrumental reasons, it’s often a good idea to do an additional step of research: determining whether learning the skill or topic in question will actually help you achieve your goal. I’ve often heard stories of people unhappy with their career progress who decide that attending graduate school is the answer. If only they had an MBA or an MA, employers would take them more seriously, they think, and they’d have the career they desire. So they go off to school for two years, rack up tens of thousands of dollars in student debt, and discover that their newly minted credentials don’t actually get them much better job opportunities than before. The fix here is to do your research first. Determine if learning a topic is likely to have the effect you want it to before you get started.[5]

Tactic: The Expert Interview Method

The main way you can do research of this kind is to talk to people who have already achieved what you want to achieve. Let’s say you want to become a successful architect and think that mastering design skills might be the best step to take. Before you get started, it would be a good idea to talk to some successful architects to get a sense of whether they think your project will actually help with your intended goal. Though this method can be used for many parts of the research process, I’ve found it particularly valuable for vetting instrumental projects. If someone who has already accomplished the goal you want to achieve doesn’t think your learning project will help reach it

or thinks it's less important than mastering some other skill, that's a good sign that your motivation and the project are misaligned.

Finding such people isn't as hard as it sounds. If your goal is career related, look for people who have the career you want and send them an email. You can find them at your current workplace, conferences, or seminars, or even on social networking websites such as Twitter or LinkedIn. If your goal is related to something else, you can search online in forums dedicated to the subject you want to learn. If you want to learn programming, with the goal of building your own apps, for example, you can find online forums dedicated to programming or app development. Then you just need to look for frequent posters who seem to have the knowledge you're looking for and email them.

Reaching out and setting up a meeting with an expert isn't hard, either, but it's a step many people shy away from. Many people, particularly the introverts among us, recoil at the idea of reaching out to a stranger to ask for advice. They worry that they'll be rejected, ignored, or even yelled at for presuming to take up a person's time. The truth is, however, that this rarely happens. Most experts are more than willing to offer advice and are flattered by the thought that someone wants to learn from their experience. The key is to write a simple, to-the-point email, explaining why you're reaching out to them and asking if they could spare fifteen minutes to answer some simple questions. Make the email concise and nonthreatening. Don't ask for more than fifteen minutes or for ongoing mentorship. Though some experts will be happy to help you in those ways, it's not good form to ask for too much in the first email.

What if the person you want to interview doesn't live in your city? In that case, phone or online calls are great alternatives.* Email can work in a pinch, too, but I've found that text often doesn't translate tone well, and you often miss sensing the way the person feels about your project. Saying it's a "great idea" lukewarmly versus enthusiastically can make a world of difference, yet that nuance is missing if you communicate via text only.

Even if your project is intrinsically motivated, asking "Why?" is still very useful. Most learning plans you might choose to emulate will be based on curriculum designers' ideas of what is important for you to learn. If these aren't perfectly lined up with your own goals, you may end up spending a lot of time learning things that aren't important to you or underemphasizing the things that do matter. For these kinds of projects, it's useful to ask yourself what you're trying to learn because it will help you evaluate different study plans for their fit with your goals.

Answering "What?"

Once you've gotten a handle on why you're learning, you can start looking at how the knowledge in your subject is structured. A good way to do this is to write down on a sheet of paper three columns with the headings "Concepts," "Facts," and "Procedures." Then brainstorm all the things you'll need to learn. It doesn't matter if the list is perfectly complete or accurate at this stage. You can always revise it later. Your goal here is to get a rough first pass. Once you start learning, you can adjust the list if you discover that your categories aren't quite right.

Concepts

In the first column, write down anything that needs to be understood. Concepts are ideas that you need to understand in flexible ways in order for them to be useful. Math and physics, for example, are both subjects that lean

heavily toward concepts. Some subjects straddle the concept/fact divide, such as law, which has legal principles that need to be understood, as well as details that need to be memorized. In general, if something needs to be understood, not just memorized, I put it into this column instead of the second column for facts.

Facts

In the second column, write down anything that needs to be memorized. Facts are anything that suffices if you can remember them at all. You don't need to understand them too deeply, so long as you can recall them in the right situations. Languages, for instance, are full of facts about vocabulary, pronunciation, and, to a lesser extent, grammar. Even concept-heavy subjects usually have some facts. If you're learning calculus, you will need to deeply understand how derivatives work, but it may be sufficient to memorize some trigonometric identities.

Procedures

In the third column, write down anything that needs to be practiced. Procedures are actions that need to be performed and may not involve much conscious thinking at all. Learning to ride a bicycle, for instance, is almost all procedural and involves essentially no facts or concepts. Many other skills are mostly procedural, while others may have a procedural component yet still have facts to memorize and concepts to understand. Learning new vocabulary in a language requires memorizing facts, but pronunciation requires practice and therefore belongs in this column.

Using This Analysis to Draw Your Map

Once you've finished your brainstorm, underline the concepts, facts, and procedures that are going to be most challenging. This will give you a good idea what the major learning bottlenecks are going to be and can start you searching for methods and resources to overcome those difficulties. You might recognize that learning medicine requires a lot of memorization, so you may invest in a system such as spaced-repetition software. If you're learning mathematics, you might recognize that deep understanding of certain concepts is going to be the tricky spot and consider spending time explaining those concepts to other people so you really understand them yourself. Knowing what the bottlenecks will be can help you start to think of ways of making your study time more efficient and effective, as well as avoid tools that probably won't be too helpful to your goal.

Often this coarse-grained analysis is enough to move on to the next phase of research. However, with more experience, you can dig deeper. You might look at some of the particular features of the concepts, facts, and procedures you're trying to learn to find methods to master them more effectively. When I started my portrait-drawing challenge, for instance, I knew that success would depend highly on how accurately I could size and place facial features. Most people can't draw realistic faces because if those attributes are off even slightly (such as making a face too wide or the eyes too high), they will instantly look wrong to our sophisticated ability to recognize faces. Therefore, I got the idea of doing lots and lots of sketches and comparing them by overlaying the reference photos. That way I could quickly diagnose what kinds of errors I was making without having to guess. If you can't make these kinds of predictions and come up with these kinds of strategies just yet, don't worry. This is the kind of long-term benefit of metalearning that comes from having done more projects.

Answering "How?"

Now that you've answered two questions—why you're learning and what you're learning—it's time to answer the final question: How are you going to learn it?

I suggest following two methods to answer how you'll learn something: Benchmarking and the Emphasize/Exclude Method.

Benchmarking

The way to start any learning project is by finding the common ways in which people learn the skill or subject. This can help you design a default strategy as a starting point.

If I'm trying to learn something that is taught in school, say computer science, neurology, or history, one thing I'll do is look at the curricula used in schools to teach that subject. This could be the syllabus from a single class or, as in the case of my MIT Challenge, the course list for an entire degree. When I wanted to learn more about cognitive science, I found a list of textbooks that the University of San Diego's Cognitive Science doctoral program recommends for incoming students without cognitive science backgrounds. Good resources to consider for this approach are universities (MIT, Harvard, Yale, and Stanford are good examples but far from the only ones). Generally course lists and syllabi are available by looking on their websites aimed at existing students.

If I'm trying to learn a nonacademic subject or a professional skill, I'll probably instead do online searches for people who have previously learned that skill or use the Expert Interview Method to focus on resources available for mastering that subject. An hour spent searching online for almost any skill should turn up courses, articles, and recommendations for how to learn it. Investing the time here can have incredible benefits because the quality of the materials you use can create orders-of-magnitude differences in your effectiveness. Even if you're eager to start learning right away, investing a few hours now can save you dozens or hundreds later on.

The Emphasize/Exclude Method

Once you've found a default curriculum, you can consider making modifications to it. I find this easier to do with skills that have obvious success criteria (say drawing, languages, or music) and for which you can generally make a guess at the relative importance to the subject topics prior to studying them. For conceptual subjects or topics where you may not even understand the meaning of the terms in the syllabus, it's probably better to stick closer to your benchmark until you learn a bit more.

The Emphasize/Exclude Method involves first finding areas of study that align with the goals you identified in the first part of your research. If you're learning French with the idea of going to Paris for two weeks and speaking in shops and restaurants, I would focus a lot more on pronunciation than being able to spell correctly. If you're learning programming solely to make your own app, I'd focus on the inner workings of app development more than theories of computation.

The second part of the Emphasize/Exclude Method is to omit or delay elements of your benchmarked curriculum that don't align with your goals. For example, one common recommendation for learning Mandarin Chinese, advocated by people such as the renowned linguist and Sinologist Victor Mair, is to focus on learning to speak before you try to read characters.6 This isn't the only route available, but if your main goal is to speak, then this path to fluency might be more effective.

How Much Planning Should You Do?

One question you may face is when to stop doing research and just get started. The literature on self-directed learning, as typically practiced, demonstrates that most people fail to do a thorough investigation of possible learning goals, methods, and resources.7 Instead they opt for whatever method of learning comes up naturally in their environment. This clearly leaves a gap between what is practiced and the efficiency that is possible using the best possible method. However, research can also be a way of procrastinating, particularly if the method of learning is uncomfortable. Just doing a bit more research then becomes a strategy to avoid doing the work of learning. There will always be some uncertainty in your approach, so it's important to find the sweet spot between insufficient research and analysis paralysis. You know when you're procrastinating, so just get started.

The 10 Percent Rule

A good rule of thumb is that you should invest approximately 10 percent of your total expected learning time into research prior to starting. If you expect to spend six months learning, roughly four hours per week, that would be equal to roughly one hundred hours, which suggests that you should spend about ten hours, or two weeks, doing your research. This percentage will decrease a little bit as your project scales up, so if you plan to do five hundred or a thousand hours of learning, I don't think it necessarily demands fifty or a hundred hours of research, but maybe closer to 5 percent of your time. The goal here isn't to exhaust every learning possibility but simply to make sure you haven't latched onto the first possible resource or method without thinking through alternatives. Prior to starting my MIT Challenge, I spent roughly six months, part-time, combing through all the course materials. A good idea is to be aware of the common methods of learning, popular resources, and tools along with their strengths and weaknesses before starting. Long projects provide more opportunities for getting derailed and delayed, so doing proper research in the beginning can easily save a much larger amount of time later on.

Diminishing Returns and Marginal Benefit Calculation

Metalearning research isn't a onetime activity you do only before starting your project. You should continue to do research as you learn more. Often obstacles and opportunities aren't clear before you start, so reassessing is a necessary step of the learning process. During my portrait-drawing challenge, for instance, I discovered about halfway that I was getting diminishing returns from my sketch-and-compare method. I realized that I needed a better technique for drawing that had higher accuracy. That led me to do a second round of research, leading to a course taught by Vitruvian Studio, which detailed a more systematic method that greatly increased my accuracy.8 I hadn't noticed it in my original research because I wasn't aware of the deficiency of my self-developed technique.

A more sophisticated answer to the question of when and how to do research would be to compare the marginal benefits of metalearning to regular learning. One way to do this is to spend a few hours doing more research—interviewing more experts, searching online for more resources, searching for new possible techniques—and then spend a few hours doing more learning along your chosen path. After spending some time on each, do a quick assessment of the relative value of the two activities. If you feel as though the metalearning research contributed more than the hours spent on learning itself, you are likely at a point where more research is still beneficial. If you felt that the extra research wasn't too helpful, you're probably better

off sticking to the plan you had before. This type of analysis depends on something known as the Law of Diminishing Returns. This states that the more time you invest in an activity (such as more research), the weaker and weaker the benefits will be as you get closer and closer to the ideal approach. If you keep doing research, eventually it will be less valuable than simply doing more learning, so at that point you can safely focus on learning. In practice, the return to research tends to be lumpy and variable. You might spend a few hours and get nothing, then stumble onto the perfect resource for accelerating your progress. As you finish more projects, it's easier to judge this point intuitively, but the Law of Diminishing Returns and the 10 Percent Rule can provide good approximations for how much research to do and when.

Long-Term Prospects for Metalearning

So far we've talked only about the short-term benefits. However, the real benefits of metalearning aren't short term but long term. They don't reside in a particular project but influence your overall strengths as a learner.

Each project you do will improve your general metalearning. Every project has the opportunity to teach you new learning methods, new ways to gather resources, better time management, and improved skills for managing your motivation. Success in one project will give you confidence to execute your next one with boldness and without self-doubt and procrastination.

Ultimately, this effect far outweighs the effect of doing a specific project. Unfortunately, it's also something that can't be boiled down to a tactic or tool. Long-term metalearning is just something you acquire with experience. The benefits of ultralearning aren't always apparent from the first project because that first project occurs when you're at your lowest level of metalearning ability. Each project you complete will give you new tools to tackle the next, starting a virtuous cycle. Many of the ultralearners I interviewed for this book told me a similar story: that they were proud of their accomplishments in individual projects but that the real benefit had been that they now understood the process of learning hard things. That gave them the confidence to pursue other ambitious goals that they wouldn't have even considered previously. This confidence and ability are the ultimate goals of ultralearning, even though they're often hard to see from the outset. These benefits, however, can be achieved only by putting in the work. The best research, resources, and strategies are useless unless you follow up with concentrated efforts to learn. That brings us to the next principle of ultralearning: focus.

Chapter 5- Principle 2- Focus: Sharpen Your Knife.

If ever there were an unlikely candidate for scientific greatness, it would have been Mary Somerville. She was born into a poor Scottish family in the eighteenth century, when higher education was not seen as proper for a lady. Her mother did not prevent her from reading, but society at large did not approve of it. An aunt, seeing that behavior, commented to her mother, “I wonder you let Mary waste her time in reading, she never sews more than if she were a man.” When she did have an opportunity to attend school briefly, her mother regretted the expense. Somerville explained, “she would have been contented if I had only learnt to write well and keep accounts, which was all that a woman was expected to know.”1 As a woman, she faced even larger obstacles, with household duties and expectations taking precedence over any kind of self-education. “A man can always command his time under the plea of business, a woman is not allowed any such excuse,” she lamented. Her first husband, Samuel Greig, was strongly against learning in women.

Yet despite those obstacles, Somerville’s accomplishments were vast. She won awards in mathematics, learned several languages to fluency, and knew how to paint and play the piano. In 1835, she, along with the German astronomer Caroline Herschel, were the first women elected to the Royal Astronomical Society. The accomplishment that eventually brought her fame was her translation and expansion of the first two volumes of Pierre-Simon Laplace’s Trait de m canique c leste, a massive five-volume work on the theory of gravitation and advanced mathematics, acclaimed as the greatest intellectual achievement since Isaac Newton wrote the Principia Mathematica. Laplace himself commented that Somerville was the only woman in the world who understood his work.

The easiest explanation for the vast discrepancy in Somerville’s situation and her accomplishments would be genius. It is no doubt true that she possessed an incredibly sharp mind. Her daughter once commented that while she was being taught, her mother could grow impatient. “I well remember her slender white hand pointing impatiently to the book or slate—‘Don’t you see it? There is no difficulty in it, it is quite clear.’” However, in reading through her descriptions of her life, this seeming genius was beset by many insecurities. She claimed to have “bad memory,” recounted struggles learning new things as a child, and had even at one point “thought [herself] too old to learn to speak a foreign language.” Whether that was polite modesty or genuine feelings of inadequacy, we cannot know, but it does at least put cracks in the idea that she approached learning from a place of unshakable confidence and talent.

Peering deeper, another picture of Somerville emerges. She had a keen intellect, yes, but what she possessed in even greater quantities was an exceptional ability to focus. As an adolescent, when she was put to bed and denied a candle for reading, she would mentally work through the works of Euclid in mathematics. While still breastfeeding her child, an acquaintance encouraged her to study botany, so she devoted “an hour of study to that science” every morning. Even during her greatest achievement, the translation and expansion of Laplace’s Trait de m canique c leste, she had to carry out all the household duties of raising children, cooking, and cleaning. “I was always supposed to be at home,” she explains, “and my friends and acquaintances came so far out of their way on purpose to see me, it would have been unkind and ungenerous not to receive them. Nevertheless,

I was sometimes annoyed when in the midst of a difficult problem one would enter and say, ‘I have come to spend a few hours with you.’ However, I learnt by habit to leave a subject and resume it again at once, like putting a mark into a book I might be reading.”

In the realm of great intellectual accomplishments an ability to focus quickly and deeply is nearly ubiquitous. Albert Einstein focused so intensely during his formulation of the general theory of relativity that he developed stomach problems. The mathematician Paul Erdős was a heavy user of amphetamines to increase his capacity for focus. When a friend bet him that he could not give them up, even for a short time, he did manage to do so. Later, however, he complained that the only result had been that mathematics as a whole was set back a month in his unfocused absence. In these annals of extreme focus, one often conjures up an image of solitary geniuses laboring away without distraction, free from worldly concerns. However remarkable this is, I’m more interested in the kind of focus that Somerville seemed to possess. How can one in an environment such as hers, with constant distractions, little social support, and continuous obligations, manage to focus long enough not only to learn an impressive breadth of subjects, but to such depths that the French mathematician Sim on Poisson once remarked that “there were not twenty men in France who could read [her] book”?

How did Somerville become so good at focusing? What can we glean from her strategies in getting difficult mental work done in less-than-ideal conditions? The struggles with focus that people have generally come in three broad varieties: starting, sustaining, and optimizing the quality of one’s focus. Ultralearners are relentless in coming up with solutions to handle these three problems, which form the basis of an ability to focus well and learn deeply.

Problem 1: Failing to Start Focusing (aka Procrastinating)

The first problem that many people have is starting to focus. The most obvious way this manifests itself is when you procrastinate: instead of doing the thing you’re supposed to, you work on something else or slack off. For some people, procrastination is the constant state of their lives, running away from one task to another until deadlines force them to focus and then having to struggle to get the job done on time. Other people struggle with more acute forms of procrastination that manifest themselves with particular kinds of tasks. I was more like this second kind of person, where there were certain types of activities I would spend all day procrastinating on. Though I have no problems writing essays for my blog, when I had to do research for this book, I dragged my feet. Similarly, I had no problem sitting and watching the videos of MIT classes, but I always tackled the first problem sets with considerable trepidation. Had it not been for the intense schedule I was on, I might have found excuses to avoid doing so for much longer. In fact, writing this chapter was one of the tasks I procrastinated on a great deal.

Why do we procrastinate? The simple answer is that at some level there’s a craving that drives you to do something else, there’s an aversion to doing the task itself, or both. In my case, I procrastinated on writing this chapter because I had a lot of ideas and I was unsure where to start. My anxiety was that by committing something to paper, there was a good chance I might end up writing it poorly. Silly, I know. But most motives to procrastinate are silly when you verbalize them, yet that doesn’t stop them from ruling your life. Which brings me to the first step to overcoming procrastination: recognize when you are procrastinating.

Much procrastination is unconscious. You're procrastinating, but you don't internalize it that way. Instead you're "taking a much-needed break" or "having fun, because life can't always be about work all the time." The problem isn't those beliefs. The problem is when they're used to cover up the actual behavior—you don't want to do the thing you need to be focusing on, either because you are directly averse to doing it or because there's something else you want to do more. Recognizing that you're procrastinating is the first step to avoiding it.

Make a mental habit of every time you procrastinate; try to recognize that you are feeling some desire not to do that task or a stronger desire to do something else. You might even want to ask yourself which feeling is more powerful in that moment—is the problem more that you have a strong urge to do a different activity (e.g., eat something, check your phone, take a nap) or that you have a strong urge to avoid the thing you should be doing because you imagine it will be uncomfortable, painful, or frustrating? This awareness is necessary for progress to be made, so if you feel as though procrastination is a weakness of yours, make building this awareness your first priority before you try to fix the problem.

Once you can easily and automatically recognize your tendency to procrastinate, when it occurs, you can take steps to resist the impulse. One way is to think in terms of a series of "crutches" or mental tools that can help you get through some of the worst parts of your tendency to procrastinate. As you get better about taking action on the project you're working on, these crutches can be changed or gotten rid of altogether when procrastination is no longer a problem.

A first crutch comes from recognizing that most of what is unpleasant in a task (if you are averse to it) or what is pleasant about an alternative task (if you're drawn to distraction) is an impulse that doesn't actually last that long. If you actually start working or ignore a potent distractor, it usually only takes a couple minutes until the worry starts to dissolve, even for fairly unpleasant tasks. Therefore, a good first crutch is to convince yourself to get over just the few minutes of maximal unpleasantness before you take a break. Telling yourself that you need to spend only five minutes on the task before you can stop and do something else is often enough to get you started. After all, almost anyone can endure five minutes of anything, no matter how boring, frustrating, or difficult it may be. However, once you start, you may end up continuing for longer without wanting to take the break.

As you progress, your first crutch may start to get in the way. You may find yourself starting but then, because the task is unpleasant and focus is hard, taking advantage of the five-minute rule too often to be productive. If this is the case and your problem has switched from being unable to get started to taking breaks too often, you can try something a little harder, say the Pomodoro Technique: twenty-five minutes of focus followed by a fiveminute break.* Keep in mind that it's essential not to switch to a harder goal when you're still mostly impeded by an earlier problem. If you still can't start working, even with the five-minute rule, switching to harder and more demanding crutches may backfire.

In some cases, the moment of frustration may not come at the beginning, but still be predictable. When I was learning Chinese characters through flash cards, for instance, I'd always feel an urge to give up whenever I couldn't remember the answer to one of my cards. I knew this feeling was temporary, however, so I added a rule for myself: I can only quit when I've remembered

the most recent card correctly. In practice, the cards were quick, so this usually only took an extra twenty or thirty seconds of persistence; however, my patience for doing flash cards went up dramatically as a result.
Eventually, if working on your project is not troubled by extreme procrastination, you may want to switch to using a calendar on which you carve out specific hours of your day in advance to work on the project. This approach allows you to make the best use of your limited time. However, it works only if you actually follow it. If you find yourself setting a daily schedule with chunked hours and then frequently ignore it to do something else, go back to the start and try building back up again with the five-minute rule and then the Pomodoro Technique.
Eventually, you may reach Mary Somerville's level of focus, one that she could activate on a moment-to-moment basis, making a decision as to whether she had time to spare. Despite her formidable capacity for focus, it seems that even Somerville would deliberately block out time for the study of particular subjects. Therefore it was a conscious habit, not merely spontaneous studying, that enabled her many successes. For myself, I find that some learning activities are so intrinsically interesting that I can focus on them for a long time without pressure. I generally had no problem watching lectures during the MIT Challenge, for instance. Other tasks, however, required the five-minute rule for me to get past my desire to procrastinate. If I had to scan and upload my files, they'd often build up in a pile before I would finally tackle them. Don't ever feel bad if you have to back up a stage, either; you cannot control your aversions or tendency to distraction, but with practice you can lessen their impact.

Problem 2: Failing to Sustain Focus (aka Getting Distracted)

The second problem people tend to encounter is an inability to sustain focus. This can happen when you've sat yourself down to study or practice something, but then your phone buzzes and you look away, a friend knocks on the door to say hello, or you spin off into a daydream only to realize you've been staring at the same paragraph for the last fifteen minutes. Like the challenge of initiating focus, sustaining focus is important if you want to make progress learning hard things. Before I talk about how to sustain focus, however, I'd like to raise a question about what kind of focus is the best to sustain.
Flow, a concept pioneered by the psychologist Mih ly Cs kszentmih lyi, is often used as the model for what ideal focus looks like. This is the state of mind you associate with being "in the zone." You stop being interrupted by distracting thoughts, and your mind becomes completely absorbed in the task at hand. Flow is the enjoyable state that slides right between boredom and frustration, when a task is neither too hard nor too easy. This rosy picture, however, does have some detractors. The psychologist K. Anders Ericsson, the researcher behind deliberate practice, argues that flow has characteristics that are "inconsistent with the demands of deliberate practice for monitoring explicit goals and feedback and opportunities for error correction. Hence, skilled performers may enjoy and seek out flow experiences as part of their domain-related activities, but such experiences would not occur during deliberate practice."2 Ultralearning, with its similar focus on performancedriven learning, would also appear to be unsuitable for flow, in the same way that Ericsson originally argued for deliberate practice.
My own thought is that a flow state is not impossible during ultralearning.

Many cognitive activities associated with learning are in the range of difficulty that makes flow possible or even likely. However, I also agree with Ericsson that learning often involves entering into situations in which the difficulty makes flow impossible. Additionally, the self-consciousness that is absent in flow may need to be present in both ultralearning and deliberate practice, as you need to consciously adjust your approach. Working on a programming problem at the limit of your abilities, pushing yourself to write in a style that is unfamiliar to you, or trying to minimize your accent when speaking a new language is each a task that goes against the automatic patterns you may have accumulated. This resistance to what is natural may make flow harder to achieve, even though it is ultimately beneficial for accomplishing your learning goal.

My advice? Don't worry about flow. In some learning tasks, you'll achieve it easily. I often felt as though I were in a flow state while doing practice problems during the MIT Challenge, drilling vocabulary while learning languages, or drawing. At the same time, don't feel guilty if flow doesn't come automatically. Your goal is to enhance your learning, and this often involves pushing through some sessions that are more frustrating than what could be considered ideal for flow. Remember, even if your learning is intense, your use of the skill later on will not be. Investments made in pushing through learning now will make skillful practice a much more enjoyable activity down the road.

After considering how you should focus, let's consider duration. How long should you study? While this problem presumes that you're getting distracted and giving up focusing long before you should, the literature on focus does not suggest that ever-longer periods of focus are optimal from a learning standpoint. Researchers generally find that people retain more of what they learn when practice is broken into different studying periods than when it is crammed together. Similarly, the phenomenon of interleaving suggests that even within a solid block of focus, it can make sense to alternate between different aspects of the skill or knowledge to be remembered.3 Therefore, if you have several hours to study, you're possibly better off covering a few topics rather than focusing exclusively on one. Doing so has trade-offs, however, so if your study time becomes more and more fractured, it may be difficult to learn at all.

What's needed is a proper balance. To achieve it, fifty minutes to an hour is a good length of time for many learning tasks. If your schedule permits only more concentrated chunks of time, say once per week for several hours, you may want to take several minutes as a break at the end of each hour and split your time over different aspects of the subject you want to learn. Of course, these are merely efficiency guidelines; you ultimately need to find what works best for you, considering not only what is optimal for the purposes of retention but also what fits your schedule, personality, and work flow. For some people, as little as twenty minutes might fit their lives best; others may prefer to spend an entire day learning.

Supposing that you've found a chunk of time to learn that is as optimal for you as it can be, how can you sustain your focus during that time? I've found that there are three different sources that cause focus to break down and distraction to occur. If you're struggling to concentrate, look at each of these three in turn.

Distraction Source 1: Your Environment

The first source of distraction is your environment. Do you have your phone

turned off? Are you accessing the internet, watching television, or playing games? Are there distracting noises and sounds? Are you prepared to work, or might you need to stop to look for pens, a book, or a lamp? This is a source of the problem of sustaining focus, but it's also an aspect people frequently ignore for the same reasons they ignore the fact that they are procrastinating. Many people tell themselves that they focus better while listening to music, let's say, but the reality might be that they don't want to work on a given task, so music provides a low-level, amusing distraction. This isn't to condemn anyone who doesn't work in a perfect environment. I certainly don't. Rather, be aware of what environment you work best in, and test it. Do you actually get more work done with the television on in the background, or do you just like hearing the television and feel that it makes the work more bearable? If it's the latter, you can probably train yourself to avoid multitasking and enjoy greater productivity. Multitasking may feel like fun, but it's unsuitable for ultralearning, which requires concentrating your full mind on the task at hand. It's better to rid yourself of this vice than to strengthen bad habits of ineffective learning.

Distraction Source 2: Your Task

The second source is the task you're trying to learn. Certain activities, due to their nature, are harder to focus on than others. I find reading harder to focus on than watching a video, even when the content is the same. Whenever you have a choice between using different tools for learning, you may want to consider which is easier to focus on when making that decision. This choice of materials shouldn't supersede other considerations—I wouldn't opt for a tool that is much less direct (Principle 3) or offers no feedback (Principle 6), simply for the sake of greater focus. Fortunately, these principles are generally aligned, and it is actually the somewhat less effective methods that are less cognitively demanding and therefore harder to sustain focus on. Sometimes you can subtly modify what you're doing to enable greater focus. If I have difficult reading to do, I will often make an effort to jot down notes that reexplain hard concepts for me. I do this mostly because, while I'm writing, I'm less likely to enter into the state of reading hypnosis where I'm pantomiming the act of reading while my mind is actually elsewhere. More intense strategies, whether solving problems, making something, or writing and explaining ideas aloud, are harder to do in the background of your mind, so there are fewer opportunities for distractions to creep in.

Distraction Source 3: Your Mind

The third source is your mind itself. Negative emotions, restlessness, and daydreaming can be some of the biggest obstacles to focus. This problem has two sides. First, it's obvious that a clear, calm mind is best for focusing on almost all learning problems. A mind filled with angers, anxieties, frustrations, or sadness will be harder to study with. This means that if you're struggling with problems in your life, you'll have a harder time learning well, and you may want to look at dealing with those first. Being in a toxic relationship, having anxiety about some other task you're procrastinating on, or simply knowing you're going down the wrong road in life can interfere with your motivation, so it's often best not to ignore these issues. However, sometimes there's nothing you can do about your emotions, and feelings arise spontaneously without requiring you to do something about them. A random worry about some future event might bubble up, let's say, but you know you shouldn't stop the activity you're working on right now in order to deal with it. Here the solution is to acknowledge the feeling, be aware of it, and gently

adjust your focus back to your task and allow the feeling to pass.
Allowing negative feelings to pass, of course, is a lot easier said than done. Emotions can hijack the mind and make the process of returning awareness to your project feel like a Sisyphean task. If I'm really anxious about something, for instance, I may feel as though I'm returning my attention to a task, only for it to jump away fifteen seconds later, repeating again and again for an hour or more. In such moments, recognize that by not reacting to the emotion at the level of abandoning your task entirely, you'll diminish its intensity in the future. You'll also strengthen your commitment to continue working in future situations like this, so they will become easier. Mindfulness researcher and psychiatrist Susan Smalley and meditation teacher Diana Winston of UCLA's Mindful Awareness Research Center argue that when we are engaging in a behavior, our typical reaction is to try to suppress distracting thoughts. If instead you "learn to let it arise, note it, and release it or let it go," this can diminish the behavior you're trying to avoid.4 If it ever feels as though continuing working is pointless because you're so distracted by a negative emotion that you can't possibly work, remember that the long-term strengthening of your ability to persist on this task will be useful, so the time is not wasted even if you don't accomplish much in this particular learning session.

Problem 3: Failing to Create the Right Kind of Focus

A third, problem, subtler than the other two, has to do with the quality and direction of your attention. Supposing you've managed to wrangle the problems of procrastination and distraction down long enough to focus on your task, how should you do it? What's the optimal degree of alertness to maximize your learning?

Here there is some interesting research relating two different variables, arousal and task complexity, to the question of how you should apply your attention. Arousal (the general, not sexual, variety) is your overall feeling of energy or alertness. When you're sleepy, you have low arousal; when you're exercising, you have high arousal. This bodily phenomenon occurs due to sympathetic nervous system activation, and it consists of a range of effects in the body that often occur together, including faster heart rate, increased blood pressure, pupil dilation, and sweating. Mentally, arousal also influences attention. High arousal creates a feeling of keen alertness, which is often characterized by a fairly narrow range of focus, but one that can also be somewhat brittle.5 This can be very good for focusing on relatively simple tasks or ones that require intense concentration toward a small target. Athletes require this kind of concentration to throw a dart at a target or shoot a basketball properly, where the task is fairly simple but requires concentration to execute properly. Too much arousal, however, and focus starts to suffer.6 It becomes very easy to be distracted, and you may have a hard time holding focus at any particular spot. Anyone who's drunk too much coffee and feels jittery knows how this can impact your work.

More complex tasks, such as solving math problems or writing essays, tend to benefit from a more relaxed kind of focus.7 Here the space of focus is often larger and more diffuse. This has advantages when, in order to solve the problem you're facing, you must consider many different inputs or ideas. Trying to solve a complex math problem or write a love sonnet is likely to require this mental quietness. When doing a particularly creative task, if you get stuck, you may benefit from no focus at all.8 Taking a break from the problem can widen the space of focus enough that possibilities that were not

in your consciousness earlier can conjoin and you can make new discoveries. This is a scientific explanation of “Eureka!” moments occurring during leisure or while falling asleep, instead of while at work. Still, before you begin to think that sloth is the key to creativity, it’s clear that such an approach often only works when one has been focusing on a problem for long enough that the residue of ideas remains in one’s mind. Not working at all is unlikely to lead to creative genius, but taking a break may help breathe fresh perspective into a hard problem.

The relationship between task complexity and arousal is interesting because the latter can be modified. In one experiment, sleep-deprived and well-rested subjects worked on a cognitive task.9 Unsurprisingly, the sleepy subjects didn’t do as well. More interesting, however, was that the sleepy subjects did better when a loud noise was played in the background, while the well-rested subjects did worse. The conclusion drawn by the researchers was that the noise increased arousal levels, which benefited the low-arousal sleepy subjects, but it increased arousal too much for the well-rested ones, causing their decline in performance. This implies that you may want to consider optimizing your arousal levels to sustain the ideal level of focus. Complex tasks may benefit from lower arousal, so working in a quiet room at home might be the right idea for math problems. Simpler tasks might benefit from a noisier environment, say working at a coffee shop. This laboratory experiment shows that you should find out what works best for your own ability to focus through self-testing. You may find you can work better on complex tasks even in the noisy coffee place, or you may find that even for simple tasks you need the quiet room in the library.

Improving Your Ability to Focus

Focus doesn’t need to be exclusive to the domain of those who have endless hours and large swaths of free time on their schedule. As was the case with Somerville, the ability to focus is even more important for those whose lives make such large commitments of time impossible. With practice you can improve your ability to focus. I’m agnostic about whether focus can be trained as an ability, in general. Just because you’re disciplined about one thing doesn’t automatically make you disciplined about everything else. However, what does generalize is that there is a procedure you can follow to get better at focusing. My advice is this: recognize where you are, and start small. If you’re the kind of person who can’t sit still for a minute, try sitting still for half a minute. Half a minute soon becomes one minute, then two. Over time, the frustrations you feel learning a particular subject may become transmuted into genuine interest. The impulse to engage in distractions will weaken each time you resist it. With patience and persistence, your few minutes may become large enough to accomplish great things, just as Somerville did almost two hundred years ago.

Now that we’ve discussed how to get started on learning hard things, let’s move to discussing the right way to learn them. The next principle, directness, is the first to explain what types of things you should do while learning and, more important, which you should avoid if you want to be able to use what you learn.

Chapter 6- Principle 3: Directness: Go Straight Ahead

After growing up in India, Vatsal Jaiswal moved to Canada with the dream of becoming an architect. Now, four years later, armed with a newly minted degree and entering into the worst job market since the Great Depression, that dream was beginning to seem very far away. Getting a foothold in architecture can be difficult, even in good economic times. But just a few years out from the market crash of 2007, it was nearly impossible. Firms were laying off even experienced architects. If anyone was hiring, they weren't taking chances on some kid just out of school. Out of his graduating class, almost nobody had found an architecture job yet. Most had given up, taking jobs outside the field, going back for more education, or moving in with parents until the economic storms abated.

Another rejection. Jaiswal leaves the offices of yet another architecture firm, walking back to his sliver of the one-bedroom apartment he shares with two roommates.1 After hundreds of r sum s submitted with no reply, he's moved on to trying a more aggressive tactic of going directly to a firm's offices, pleading to speak with whomever is in charge. Still, after weeks of knocking on doors and making dozens of unsolicited office visits, there's no job offer in sight. He hasn't even gotten a call back for a single interview.

Still, Jaiswal suspected that his struggles could be blamed on more than just the recession. From the snippets of feedback he could pry out of the places he applied to, he sensed that the companies didn't see him as a useful employee. He had studied architecture in school, but his program had focused mostly on design and theory. He had been trained in creative design projects that were isolated from the reality of building codes, construction costs, and tricky software. Because his portfolio of school projects didn't resemble the detailed technical documents the architects worked with, they thought hiring him would involve a lengthy training period, something few firms could currently afford.

Jaiswal needed to come up with a plan. More r sum submissions and office walk-ins weren't going to work. He needed a new portfolio that could prove he had the exact skills firms wanted. He needed to show them that, rather than being a burden, he could get to work straightaway and be a valuable team member from the first day.

To do this, he would need to know more about how architects actually drew plans for buildings—not just the big theories and designs, which he had learned in school, but little details of how they did their drawings, what codes they used to represent different materials, and what the drawings showed and omitted. To do that, he found a job at a large-form print shop, the kind that does printing on the large sheets of paper favored for architectural blueprints. Low paying and low skilled, a job in a print shop wasn't Jaiswal's end goal. Still, it could help him scrape by financially while he prepared his new portfolio. Even better, the print store gave him daily exposure to the blueprints firms were using. That allowed him to absorb countless details about how the drawings were put together.

Next, Jaiswal would need to upgrade his technical skills. From his walk-in visits, he was aware that many of the firms he was applying at were using a complex design software called Revit. If he could master its ins and outs, he thought, he could be immediately useful in the technology-heavy entry-level position he desired. At night, he pushed through online tutorials and taught

himself the software.
Finally, he was ready to construct a new portfolio. Combining his new Revit knowledge with the knowledge of architectural drawings he had gained while working at the print shop, he made a new portfolio. Instead of the assorted projects from university, he focused on a single building of his own design: a three-tower residential structure with raised courtyards and a modern aesthetic. The project pushed his skills with software further, forcing him to learn new methods and ideas beyond the basics of his online tutorials and exposure at the print shop. Eventually, after a few months of work, he was ready.
New portfolio in hand, Jaiswal submitted it again, this time to just two architecture firms. To his surprise, they both immediately offered him a job.
The Importance of Being Direct
Jaiswal's story perfectly illustrates the third principle of ultralearning: directness. By seeing how architecture was actually being done and learning a set of skills that was closely related to the job position he wanted to perform, he was able to cut through the swaths of recent graduates with unimpressive portfolios.
Directness is the idea of learning being tied closely to the situation or context you want to use it in. In Jaiswal's case, when he wanted to get enough architectural skill that firms would hire him, he opted to build a portfolio using the software those firms used and design in the style those firms practiced. There are many routes to self-education, but most of them aren't very direct. In contrast to Jaiswal, another architect I spoke with aimed to improve his employability by deepening his knowledge of design theories. Though that might have been interesting and fun, it was disconnected from the actual skills he would be using in entry-level work. Just as Jaiswal struggled to get work with his university portfolio, many of us are building the wrong portfolio of skills for the kinds of career and personal achievements we want to create. We want to speak a language but try to learn mostly by playing on fun apps, rather than conversing with actual people. We want to work on collaborative, professional programs but mostly code scripts in isolation. We want to become great speakers, so we buy a book on communication, rather than practice presenting. In all these cases the problem is the same: directly learning the thing we want feels too uncomfortable, boring, or frustrating, so we settle for some book, lecture, or app, hoping it will eventually make us better at the real thing.
Directness is the hallmark of most ultralearning projects.* Roger Craig did his Jeopardy! testing on the actual questions from past shows. Eric Barone learned video game art by making art for his video game. Benny Lewis learns to speak languages quickly by following a policy of attempting some backand-forth dialog from the very first day. What these approaches share is that the learning activities are always done with a connection to the context in which the skills learned will eventually be used.
The opposite of this is the approach so often favored in more traditional classroom-style learning: studying facts, concepts, and skills in a way that is removed from how those things will eventually be applied: mastering formulas before you understand the problem they're trying to solve; memorizing the vocabulary of a language because it's written on a list, not because you want to use it; solving highly idealized problems that you'll never see again after graduation.
Indirect approaches to learning, however, aren't limited to traditional

education. Many self-directed learners fall into the trap of indirect learning. Consider Duolingo, currently one of the most popular language-learning applications. On the surface, there's a lot to like about this app. It's colorful and fun and gives you a potent sense of progress. But I suspect that much of the sense of progress is an illusion, at least if your goal is to eventually be able to speak the language. To understand why, consider how Duolingo encourages you to practice. It provides English words and sentences and then asks you to pick words from a word bank to translate them.* The problem is that this is nothing like actually speaking a language! In real life, you may start by trying to translate an English sentence into the language you want to learn. However, real speaking situations don't present themselves as a multiple choice. Instead, you have to dredge up the actual words from memory or find alternative words if you haven't learned one of the ones you want to use. This is, cognitively speaking, quite a different task from picking out matching translations from a highly limited word bank, and also much more difficult. Benny Lewis's method of speaking from the start may be hard, but it transfers perfectly to the task he eventually wants to become good at: having conversations.

During the MIT Challenge, I recognized that the most important resource for being able to eventually pass the classes wasn't having access to recorded lectures, it was having access to problem sets. Yet, in the years since this project, when I am asked for help by students, they often decry the absence of lecture videos from some classes, only rarely complaining about incomplete or insufficient problem sets. This makes me think that most students view sitting and listening to a lecture as the main way that they learn the material, with doing problems that look substantially similar to those on the final exam as being a superficial check on their knowledge. Though first covering the material is often essential to begin doing practice, the principle of directness asserts that it's actually while doing the thing you want to get good at when much of learning takes place. The exceptions to this rule are rarer than they may first appear, and therefore directness has been a thorny problem in the side of education for over a century.

The easiest way to learn directly is to simply spend a lot of time doing the thing you want to become good at. If you want to learn a language, speak it, as Benny Lewis does. If you want to master making video games, then make them, as Eric Barone does. If you want to pass a test, practice solving the kinds of problems that are likely to appear on it, as I did in my own MIT Challenge. This style of learning by doing won't work for all projects. The "real" situation may be infrequent, difficult, or even impossible to create, and thus learning in a different environment is unavoidable. Roger Craig couldn't practice Jeopardy! by being on the show hundreds of times. He knew he had to learn in a different environment and prepare to transfer that knowledge to the show when it came time to do so. In such situations, directness isn't an all-or-nothing feature but something you can gradually increase to improve your performance. Craig's approach to start by learning from actual past Jeopardy! questions was a lot more effective than if he had just started learning trivia from random topics. Jaiswal was similarly limited when learning architectural skills, as the places he wanted to work wouldn't hire him. However, he worked around that by training on the same software they used and designing a portfolio that was based on the same types of drawings and renderings that were done in actual practice. The twin challenge of directness is that sometimes the exact situation in which you want to use the

skill isn't available for easy practice. Even if you can go straight into learning by doing, this approach is often more intense and uncomfortable than passively watching lecture videos or playing around with a fun app. If you don't pay attention to directness, therefore, it's very easy to slip into lousy learning strategies.

One of the big takeaways of Jaiswal's story might not be the triumph of his self-directed learning project but the failure of his formal education. After all, his difficulties started after he had already spent four years studying architecture intensely at university. Why, then, would such a small project, postgraduation, make such a large difference in his employability? To answer that, I'd like to turn to one of the most stubborn and disturbing problems in educational psychology: the problem of transfer.

Transfer: Education's Dirty Secret

Transfer has been called the "Holy Grail of education." It happens when you learn something in one context, say in a classroom, and are able to use it in another context, say in real life. Although this may sound technical, transfer really embodies something we expect of almost all learning efforts—that we'll be able to use something we study in one situation and apply it to a new situation. Anything less than this is hard to describe as learning at all.

Unfortunately, transfer is also something that, despite more than a century of intense work and research, has largely failed to occur in formal education. The psychologist Robert Haskell has said in his excellent coverage of the vast literature on transfer in learning, "Despite the importance of transfer of learning, research findings over the past nine decades clearly show that as individuals, and as educational institutions, we have failed to achieve transfer of learning on any significant level." He later added, "Without exaggeration, it's an education scandal."[2]

The situation is even more disturbing than it sounds. Haskell pointed out, "We expect that there will be transfer of learning, for example, from a high school course in introductory psychology to a college-level introduction to psychology course. It has been known for years, however, that students who enter college having taken a high school psychology course do no better than students who didn't take psychology in high school. Some students who have taken a psychology course in high school do even worse in the college course." In another study, college graduates were asked questions about economic issues and no difference in performance was found between those who had taken an economics class and those who had not.[3]

Providing multiple examples seems to aid transfer a bit, yet the cognitive science researcher Michelene Chi noted that "in almost all the empirical work to date, on the role of example solutions, a student who has studied examples often cannot solve problems that deviate slightly from the example solution."[4] In his book The Unschooled Mind: How Children Think and How Schools Should Teach, the developmental psychologist Howard Gardner pointed to the body of evidence showing that even "students who receive honors grades in college-level physics courses are frequently unable to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested."[5] Nor has this failure of transfer been limited to schools. Corporate training also suffers, with the former Times Mirror Training Group chairman John H. Zenger writing "Researchers who rigorously evaluate training have said that demonstrable changes following training are hard to find."[6]

The recognition of the failure of general transfer has a history as long as

the study of the problem itself. The first attack on the problem came from the psychologists Edward Thorndike and Robert Woodworth in 1901, with their seminal paper “The Influence of Improvement in One Mental Function upon the Efficiency of Other Functions.” In it, they attacked the dominant theory of education at the time, so-called formal discipline theory. This theory suggested that the brain was analogous to a muscle, containing fairly general capacities of memory, attention, and reasoning, and that training those muscles, irrespective of the content, could result in general improvement. This was the predominant theory behind universal instruction in Latin and geometry, on the idea that it would help students think better. Thorndike was able to refute this idea by showing that the ability to transfer was much narrower than most people had assumed.

Although studying Latin has fallen out of favor, many educational pundits are reviving new incarnations of the formal discipline theory by suggesting that everyone learn programming or critical thinking in order to improve their general intelligence. Many popular “brain-training” games also subscribe to this view of the mind, assuming that deep training on one set of cognitive tasks will extend to everyday reasoning. It’s been more than one hundred years since the verdict came in, yet the allure of a general transfer procedure still has many searching for the Holy Grail.

Despite all this, the situation isn’t without hope. Although empirical work and educational institutions have often failed to demonstrate significant transfer, it is not the case that transfer doesn’t exist. Wilbert McKeachie, in reviewing the history of transfer, noted that “Transfer is paradoxical. When we want it, we do not get it. Yet it occurs all the time.”7 Whenever you use an analogy, saying something is like something else, you’re transferring knowledge. If you know how to ice skate and later learn to Rollerblade, you’re transferring skills. As Haskell pointed out, if transfer were really impossible, we would be unable to function.

So what explains the disconnect? Why have educational institutions struggled to demonstrate significant transfer, if transfer is something we all need to function in the world? Haskell suggests that a major reason is that transfer tends to be harder when our knowledge is more limited. As we develop more knowledge and skill in an area, they become more flexible and easier to apply outside the narrow contexts in which they were learned. However, I’d like to add my own hypothesis as an explanation for the transfer problem: most formal learning is woefully indirect.

Overcoming the Problem of Transfer with Directness

Directness solves the problem of transfer in two ways. The first and most obvious is that if you learn with a direct connection to the area in which you eventually want to apply the skill, the need for far transfer is significantly reduced. Given a century of research showing the difficulties of transfer along with proposed solutions that have failed to provide lasting results, any student must take seriously the notion that transferring what has been learned between very different contexts and situations will be treacherous. If our learning is, as Haskell suggests, “welded to a place or subject matter,” it is a lot better that those situations be close to the ones we actually want to use.

Second, I believe that directness may help with transfer to new situations, beyond its more obvious role in preventing the need for far transfer. Many real-life situations share many subtle details with other real-life situations that they never share with the abstract environment of the classroom or textbook. Learning something new rarely depends just on the mass of easily articulated

and codified knowledge present but on the myriad tiny details of how that knowledge interacts with reality. By learning in a real context, one also learns many of the hidden details and skills that are far more likely to transfer to a new real-life situation than from the artificial environment of a classroom. Using a personal example, one of the skills I found most important in the no-English project was being able to quickly use a dictionary or translation app on my phone, so I could fill gaps in my linguistic knowledge in midconversation. However, it's exactly this kind of practical skill that is rarely covered in a language-learning curriculum. While this is a trivial example, real-life situations contain thousands of such pieces of skill and knowledge that are necessary if you're going to apply academically learned subjects in the real world.

Ultimately, it will be for researchers to decide whether the Holy Grail of education will ever be found. In the meantime, as learners, we must accept that initial learning efforts often stick stubbornly to the situations we learn them in. The programmer who learns about an algorithm from a class may have trouble recognizing when to use it in her code. The leader who learns a new management philosophy from a business book may go back to working with the same approach she has always used with her employees. My favorite example, though, has to be when a group of friends invited me to join them at a casino. I asked them if their studies ever kept them from enjoying gambling, and they just looked at me blankly. I thought it was funny because the students were actuaries. Their years spent studying statistics in the classroom should have convinced them that you can't expect to beat the house, yet that connection didn't seem to dawn on them. When we learn new things, therefore, we should always strive to tie them directly to the contexts we want to use them in. Building knowledge outward from the kernel of a real situation is much better than the traditional strategy of learning something and hoping that we'll be able to shift it into a real context at some undetermined future time.

How Ultralearners Avoid the Problem of Transfer and Learn Directly

Given the problem of transfer and the importance of learning directly, let's look at some of the ways that this is managed in different ultralearning projects. The simplest way to be direct is to learn by doing. Whenever possible, if you can spend a good portion of your learning time just doing the thing you want to get better at, the problem of directness will likely go away. If this isn't possible, you may need to create an artificial project or environment to test your skills. What matters most here is that the cognitive features of the skill you're trying to master and the way you practice it be substantially similar. Consider again Craig's simulation of Jeopardy! games by doing questions from old tests. The fact that he was using actual past questions is more important than whether his program matched the signature blue background color present on the show's display. This is because the background color didn't provide any information that would have changed his responses to the questions. The skill he was practicing wasn't changed much by it. In contrast, if he had taken trivia questions from a different game (say the board game Trivial Pursuit) there might have been differences in how questions are typically asked, the topics they are drawn from, or the difficulty level. Worse, if he had spent all his time reading random Wikipedia articles to learn trivia, he wouldn't have been practicing the fundamental skill of recalling answers based on cryptic Jeopardy!-style clues at all.

In other cases, what you're trying to achieve may not be a practical skill. Many of the ultralearners I encountered wanted, as their end goal, to understand a subject particularly well, such as Vishal Maini with machine learning and artificial intelligence. Even my own MIT Challenge was based around gaining a deep understanding of computer science, as opposed to a more practical goal of building an app or video game. Though this may seem like a case where directness no longer matters, that really isn't true. It's simply that the place you want to apply these ideas is less obvious and concrete. In Maini's case, he wanted to be able to think and talk intelligently about machine learning, enough to be able to land a nontechnical role in a company that utilized those methods. That meant that being able to communicate his ideas articulately, understanding the concepts clearly, and being able to discuss them with both knowledgeable practitioners and laypeople was important. That's why his goal to make a minicourse explaining the basics of machine learning fit so well. His learning was directly connected with where he wanted to apply the skill: communicating it to others.

Although the findings of the research on transfer are fairly bleak, there is a glimmer of hope, which is that gaining a deeper knowledge of a subject will make it more flexible for future transfer. Whereas the structures of our knowledge start out brittle, welded to the environments and contexts we learn them in, with more work and time they can become flexible and can be applied more broadly. This is the conclusion of Robert Haskell, and although it does not provide a short-term solution to the problem for new learners, it does suggest a path out for those who want to continue working on a subject until they master it. Many ultralearners who have specialized in a smaller subset of fields are masters at transfer; no doubt this is largely due to their depth of knowledge, which makes transfer easier to accomplish. Dan Everett, who was featured in the opening of the chapter on the first principle, metalearning, is a prime example of this. His linguistic depth allows him to learn new languages relatively easily, compared to someone who has learned only a second language or has learned only languages academically.

How to Learn Directly

Given the well-documented difficulty with indirect forms of learning, why are they still the default both in schools and in many failed attempts at selfeducation? The answer is that learning directly is hard. It is often more frustrating, challenging, and intense than reading a book or sitting through a lecture. But this very difficulty creates a potent source of competitive advantage for any would-be ultralearner. If you're willing to apply tactics that exploit directness despite these difficulties, you will end up learning much more effectively.

Let's examine some of the tactics ultralearners use to maximize this principle and take advantage of the inadequacies of more typical schooling.

Tactic 1: Project-Based Learning

Many ultralearners opt for projects rather than classes to learn the skills they need. The rationale is simple: if you organize your learning around producing something, you're guaranteed to at least learn how to produce that thing. If you take classes, you may spend a lot of time taking notes and reading but not achieve your goal.

Learning to program by creating your own computer game is a perfect example of project-based learning. Engineering, design, art, musical composition, carpentry, writing, and many other skills naturally lend

themselves to projects that produce something at the end. However, an intellectual topic can also be the basis of a project. One ultralearner I interviewed, whose project is still ongoing, wanted to learn military history. His project, in this case, was to work toward producing a thesis paper. Since his end goal was to be able to converse knowledgeably about the subject, a project to produce an original paper applied learning more directly than simply trying to read a lot of books without creating anything.

Tactic 2: Immersive Learning

Immersion is the process of surrounding yourself with the target environment in which the skill is practiced. This has the advantage of requiring much larger amounts of practice than would be typical, as well as exposing you to a fuller range of situations in which the skill applies.

Learning a language is the canonical example of where immersion works. By immersing yourself in an environment where a language is spoken, not only do you guarantee that you'll end up practicing the language a lot more than you would otherwise (since you have no choice), but you also face a broader diversity of situations that require learning new words and phrases. However, language learning is not the only place where you can apply immersion to learn more. Joining communities of people who are actively engaged in learning can have a similar impact, since it encourages constant exposure to new ideas and challenges. For example, novice programmers might join open-source projects to expose themselves to new coding challenges.

Tactic 3: The Flight Simulator Method

Immersion and projects are great, but for many skills there's no way to actually practice the skill directly. For skills such as piloting a plane or performing surgery, it's not even legal to practice them in a real situation until you've already invested considerable time into training. How can you overcome this?

It's important to note that what matters for transfer is not every possible feature of the learning environment, such as what room you're in or what clothes you're wearing while you learn. Rather, it's the cognitive features—situations where you need to make decisions about what to do and cue knowledge you've stored in your head. This suggests that when direct practice is impossible, a simulation of the environment will work to the degree to which it remains faithful to the cognitive elements of the task in question. For flying a plane, this means that practicing on a flight simulator may be as good for learning as flying an actual plane if it sufficiently calls on the discriminations and decisions a pilot needs to make. Better graphics and sounds aren't important, unless they change the nature of the decisions being made or the cues pilots receive for when to use certain skills or knowledge.[8]

When evaluating different methods for learning, those that significantly simulate the direct approach will transfer a lot better. Therefore, if you're trying to evaluate what's the best way to learn French before your trip to France, you'll get more (although not perfect) transfer from doing Skype tutoring than you will from flipping through flash cards.

Tactic 4: The Overkill Approach

The last method I've found for enhancing directness is to increase the challenge, so that the skill level required is wholly contained within the goal that is set. Tristan de Montebello, when preparing to compete in the World Championship of Public Speaking, pushed to speak at middle schools, giving early versions of his talk. His feeling was that the feedback he received at

Toastmasters clubs might be too soft or congratulatory to cut deep at what worked and didn't work in his speech. Middle school students, in contrast, would be merciless. If a joke he said wasn't funny or his delivery was boring or cheesy, he would be able to tell immediately from their faces what needed to be reworked. The overkill approach is to put yourself into an environment where the demands are going to be extremely high, so you're unlikely to miss any important lessons or feedback.

Going into this environment can feel intense. You may feel as though you're "not ready" to start speaking a language you've barely learned. You may be afraid to stand onstage and deliver a speech you haven't memorized perfectly. You might not want to dive right into programming your own application and prefer to stick to watching videos where someone else does the coding. But these fears are often only temporary. If you can get enough motivation to start this method, it's often a lot easier to continue it long term. The first week in each new country in my language learning project was always a shock, but soon it became completely normal to live entirely within the new language.

One way you can overkill a project is to aim for a particular test, performance, or challenge that will be above the skill level you strictly require. Benny Lewis likes to attempt language exams, because they provide a concrete challenge. In his German project, he wanted to attempt the highestlevel exam, because his awareness of that goal would push him to study more than he might if he were satisfied with comfortable conversations alone. Another friend of mine decided to exhibit her photography as a means of pushing her skills and talent. Deciding in advance that your work will be viewable publicly alters your approach to learning and will gear you toward performance in the desired domain, rather than just checking off boxes of facts learned.

Learn Straight from the Source

Learning directly is one of the hallmarks of many of the successful ultralearning projects I've encountered, particularly because of how different it can be from the style of education most of us are used to. Whenever you learn anything new, it's a good habit to ask yourself where and how the knowledge will manifest itself. If you can answer that, you can then ask whether you're doing anything to tie what you're learning to that context. If you're not, you need to tread carefully, as the problem of transfer may rear its ugly head.

The act of learning directly, however, is only half of the answer to the question of what you should do to learn well. Doing a lot of direct practice in the environment where you want to eventually use your skills is an important start. However, in order to master skills quickly, bulk practice isn't enough. This brings us to our next principle of ultralearning: drill.

Chapter 7: Principle 4: Drill: Attack Your Weakest Point

Of all the roles Benjamin Franklin played throughout his life—entrepreneur, inventor, scientist, diplomat, and founding father of the United States—he was first and foremost a writer. It was in writing that he first found success. After fleeing Boston to escape the final years of his indentured labor as an apprentice to his brother's printing company, he went to Philadelphia. There, penniless and unknown, he first worked for another printing company before establishing himself as a competitor. His Poor Richard's Almanack became an international bestseller and allowed him to retire at forty-two. However, it was in the latter half[1] of his life that his writing would have world-changing consequences.[2]

As a scientist, Franklin was bad at math and more interested in practical consequences than in grand theories of the universe. However, his prose was "written equally well for the uninitiated as well as the philosopher," noted the English chemist Sir Humphrey Davy, adding "he has rendered his details as amusing as well as perspicuous."[3] The strength of his writing and its practical consequences made him an international sensation.

In politics, it was again Franklin's writing talent that helped him win allies and persuade potential antagonists. Prior to the American Revolution, he penned an essay, supposedly written by King Frederick II of Prussia, entitled "An Edict by the King of Prussia." In it he satirized British-American relations by proposing that, due to early settlers of the British Isles being of German origin, "revenue [should] be raised from said colonies in Britain" by the Prussian king.

Later, his skill with a pen would make his writing into the Declaration of Independence, where he edited Thomas Jefferson's words to become the now famous "We hold these truths to be self-evident."

With such an amazing skill for writing and persuasion, it's worth asking how Franklin acquired it. Fortunately, unlike so many other great writers, whose efforts at honing their skills remain mysterious, we have Franklin's own words for how he did it. In his Autobiography, he details his sophisticated efforts to slice apart sections of his writing skill for practice as a young boy. Beginning with a childhood debate against a friend about the merits of educating women (Franklin was for, his friend against), his father noticed that aspects of his writing lacked persuasive ability. Franklin thus "determined to endeavor at improvement" and went about a series of exercises to practice his writing skill.

One such exercise he documents was taking a favorite magazine of his, The Spectator, and taking notes on articles that appeared there. He would then leave the notes for a few days and come back to them, trying to reconstruct the original argument from memory. After finishing, he "compared my Spectator with the original, discovered some of my faults, and corrected them." Realizing that his vocabulary was limited, he developed another strategy. By turning the prose into verse, he could replace words with synonyms that matched in meter or rhyme. To improve his sense of the rhetorical flow of an essay, he tried his imitation approach again, but this time he jumbled up the hints so he would have to determine the correct order of the sequence of ideas as he wrote again.

Once he had established some of the mechanics of writing, he moved on to the more difficult task of writing in a style that would persuade. When

reading an English grammar book, he was exposed to the idea of the Socratic method, of challenging another's ideas through probing questions rather than direct contradiction. He then went to work, carefully avoiding "abrupt contradiction and positive argumentation," instead focusing on being the "humble inquirer and doubter."

Those early efforts produced results. At age sixteen, he wanted to try to get his work published. Fearing that his elder brother might reject it out of hand, however, he disguised his penmanship and submitted his essay under the pseudonym Silence Dogood, purporting to be a widowed woman living in the countryside. His brother, not knowing the true author, approved and published the essay, so Franklin returned and wrote more. Although initiated as a ruse to have his writing considered fairly, Franklin's practice in adopting other characters would prove invaluable in his later career. Poor Richard's Almanack, for example, was written from the perspective of a simple husband and wife, Richard and Bridget Saunders, and his political essays such as his "An Edict by the King of Prussia" similarly made use of his flexibility to adopt imagined perspectives.

It's difficult to imagine Franklin having become the household name he is today without his having first established a mastery of writing. Whether it was business, science, or statecraft, the unchanging core of what made him persuasive and great was his ability to write well. What distinguished Franklin wasn't merely the amount he wrote or his raw talent but how he practiced. The way in which he decided to break apart the skill of writing and practice its elements in isolation enabled him to master writing at a young age and apply it to the other pursuits for which he would later become famous. Such careful analysis and deliberate practice forms the basis for the fourth ultralearning principle: drill.

The Chemistry of Learning

In chemistry, there's a useful concept known as the rate-determining step. This occurs when a reaction takes place over multiple steps, with the products of one reaction becoming the reagents for another. The rate-determining step is the slowest part of this chain of reactions, forming a bottleneck that ultimately defines the amount of time needed for the entire reaction to occur. Learning, I'd like to argue, often works similarly, with certain aspects of the learning problem forming a bottleneck that controls the speed at which you can become more proficient overall.

Consider learning mathematics. This is a complex skill that has many different parts: you need to be able to understand the fundamental concepts, you need to be able to remember the algorithm for solving a certain type of problem, and you need to know in what context it applies. Underlying this ability, however, is the ability to do arithmetic and algebra so as to be able to solve the problems in question. If your arithmetic is weak or your algebra sloppy, you'll get the wrong answers even if you've mastered the other concepts.

Another rate-determining step could be vocabulary when learning a foreign language. The number of sentences you can successfully utter depends on how many words you know. If you know too few, you won't be able to talk about very much. If you were able to suddenly inject hundreds of new words into your mental database, you might drastically expand your fluency even if your pronunciation, grammar, or other linguistic knowledge remains unchanged.

This is the strategy behind doing drills. By identifying a rate-determining

step in your learning reaction, you can isolate it and work on it specifically. Since it governs the overall competence you have with that skill, by improving at it you will improve faster than if you try to practice every aspect of the skill at once. That was Franklin's insight that allowed him to rapidly improve his writing: by identifying components of the overall skill of writing, figuring out which mattered in his situation, and then coming up with clever ways to emphasize them in his practice, he could get better more quickly than if he had just spent a lot of time writing.

Drills and Cognitive Load

Rate-determining steps in learning—where one component of a complex skill determines your overall level of performance—are a powerful reason to apply drills. However, they aren't the only one. Even if there isn't one isolatable aspect of the skill that is holding back your performance, it may still be a good idea to apply drills.

The reason is that when you are practicing a complex skill, your cognitive resources (attention, memory, effort, etc.) must be spread over many different aspects of the task. When Franklin was writing, he had to consider not only the logical content of the argument he was making but word choice and rhetorical style. This can create a learning trap. In order to improve your performance in one aspect, you may need to devote so much attention to that one aspect that the other parts of your performance start to go down. If you can judge yourself only on how much you improve at the overall task, it can lead to a situation in which your improvement slows down because you will be getting worse at the overall task while becoming better at a specific component of it.

Drills resolve this problem by simplifying a skill enough that you can focus your cognitive resources on a single aspect. When Franklin focused on reconstructing the order of an essay he had read previously, he could devote all his attention to asking what sequence of ideas leads to a good essay rather than also needing to worry about word usage, grammar, and the content of the arguments.

Astute readers will probably notice a tension between this principle and the last. If direct practice involves working on a whole skill nearest to the situation in which it will eventually be used, drills are a pull in the opposite direction. A drill takes the direct practice and cuts it apart, so that you are practicing only an isolated component. How can you resolve this contradiction?

The Direct-Then-Drill Approach

The tension between learning directly and doing drills can be resolved when we see them as being alternating stages in a larger cycle of learning. The mistake made in many academic strategies for learning is to ignore the direct context or abstract it away, in the hope that if enough component skills are developed, they will eventually transfer. Ultralearners, in contrast, frequently employ what I'll call the Direct-Then-Drill Approach.

The first step is to try to practice the skill directly. This means figuring out where and how the skill will be used and then trying to match that situation as close as is feasible when practicing. Practice a language by actually speaking it. Learn programming by writing software. Improve your writing skills by penning essays. This initial connection and subsequent feedback loop ensure that the transfer problem won't occur.

The next step is to analyze the direct skill and try to isolate components that are either rate-determining steps in your performance or subskills you

find difficult to improve because there are too many other things going on for you to focus on them. From here you can develop drills and practice those components separately until you get better at them.

The final step is to go back to direct practice and integrate what you've learned. This has two purposes. The first is that even in well-designed drills, there are going to be transfer hiccups owing to the fact that what was previously an isolated skill must be moved to a new and more complex context. Think of this as being like building the connective tissue to join the muscles you strengthened separately. The second function of this step is as a check on whether your drill was well designed and appropriate. Many attempts to isolate a drill may end in failure because the drill doesn't really cut at the heart of what was difficult in real practice. That's okay; this feedback is important to help you minimize wasting time learning things that don't matter much to your end goals.

The earlier you are in the learning process, the faster this cycle should be. Cycling between direct practice and drills, even within the same learning session, is a good idea when you're just starting out. Later, as you get better at what you are trying to do and a lot more effort is required to noticeably improve your overall performance, it's more acceptable to take longer detours into drills. As you approach mastery, your time may end up focused mostly on drills as your knowledge of how the complex skill breaks down into individual components becomes more refined and accurate and improving any individual component gets harder and harder.

Tactics for Designing Drills

There are three major problems when applying this principle. The first is figuring out when and what to drill. You should focus on what aspects of the skill might be the rate-determining steps in your performance. Which aspect of the skill, if you improved it, would cause the greatest improvement to your abilities overall for the least amount of effort? Your accounting skills might be limited by the fact that your Excel knowledge is superficial, which prevents you from applying all the things you know to practical situations. Your language abilities may be held back by having inaccurate pronunciation, even though you know the right words. Look as well to aspects of a skill that you need to juggle simultaneously. These may be harder to improve because you can't devote enough cognitive resources to improving them. When writing a new article, you may have to juggle research, storytelling, vocabulary, and many other aspects simultaneously, making it hard to get a lot better at just one. Determining what to drill may seem tricky, but it doesn't have to be. The key is to experiment. Make a hypothesis about what is holding you back, attack it with some drills, using the Direct-Then-Drill Approach, and you can quickly get feedback about whether you're right.

The second difficulty with this principle is designing the drill to produce improvement. This is often hard because even if you recognize an aspect of your performance you're weak on, it may be tricky to design a drill that trains that component without artificially removing what makes it difficult in actual application. Franklin's drills were uncommon, I believe, because most people, even recognizing specific deficits in their writing ability, would not have had the ingenuity to find ways to drill subskills such as ordering arguments persuasively and emulating a successful writing style.

Finally, doing drills is hard and often uncomfortable. Teasing out the worst thing about your performance and practicing that in isolation takes guts. It's

much more pleasant to spend time focusing on things you're already good at. Given this natural tendency, let's look at some good ways to do drills so you can start applying them yourself.

Drill 1: Time Slicing

The easiest way to create a drill is to isolate a slice in time of a longer sequence of actions. Musicians often do this kind of training when they identify the hardest parts of a piece of music and practice each one until it's perfect before integrating it back into the context of the entire song or symphony. Athletes similarly engage in this process when they drill skills that are normally a fraction of total playing time, such as layups or penalty shots. In the early phase of learning a new language, I often obsessively repeat a few key phrases, so they quickly get embedded into my long-term memory. Look for parts of the skill you're learning that can be decomposed into specific moments of time that have heightened difficulty or importance.

Drill 2: Cognitive Components

Sometimes what you'll want to practice isn't a slice in time of a larger skill but a particular cognitive component. When speaking a language, grammar, pronunciation, and vocabulary occur at all moments, but they form different cognitive aspects that must be managed simultaneously. The tactic here is to find a way to drill only one component when, in practice, others would be applied at the same time. When learning Mandarin Chinese, I would do tone drills that involved pronouncing pairs of words with different tones and recording myself speaking. That allowed me to practice producing different tones quickly, without the distraction of needing to remember what the words meant or how to form grammatically correct sentences.

Drill 3: The Copycat

A difficulty with drills in many creative skills is that it is often impossible to practice one aspect without also doing the work of the others. When Franklin was trying to improve his ability to order arguments logically, for instance, it wasn't possible to do so without writing an entire essay. To solve this problem in your own learning, you can take a page from Franklin: by copying the parts of the skill you don't want to drill (either from someone else or your past work), you can focus exclusively on the component you want to practice. Not only does this save a lot of time, because you need to repeat only the part you're drilling, it also reduces your cognitive burden, meaning you can apply more focus to getting better at that one aspect. When practicing drawing, I started by drawing not just from photos but from drawings other people had done. That helped me focus on the skill of accurately rendering the picture, simplifying the decision about how to frame the scene and which details to include. For flexible creative works, editing works you've created in the past may have the same effect, allowing you to selectively improve an aspect of your work without having to consider the other demands of an original composition.

Drill 4: The Magnifying Glass Method

Suppose you need to create something new and can't edit or separate out the part you want to practice. How can you create a drill? The Magnifying Glass Method is to spend more time on one component of the skill than you would otherwise. This may reduce your overall performance or increase your input time, but it will allow you to spend a much higher proportion of your time and cognitive resources on the subskill you want to master. I applied this method when trying to improve my ability to do research when writing articles, by spending about ten times as long on research as I had previously.

Although I still had to do all the other parts of writing the article, by spending much longer on research than I would normally, I could develop new habits and skills for doing so.

Drill 5: Prerequisite Chaining

One strategy I've seen repeatedly from ultralearners is to start with a skill that they don't have all the prerequisites for. Then, when they inevitably do poorly, they go back a step, learn one of the foundational topics, and repeat the exercise. This practice of starting too hard and learning prerequisites as they are needed can be frustrating, but it saves a lot of time learning subskills that don't actually drive performance much. Eric Barone, for instance, started his pixel art experiments simply by making them. When he struggled with certain aspects, such as colors, he went back, learned color theory, and repeated his work. Benny Lewis has a similar habit of starting with speaking from a phrase book and only later learning the grammar that explains how the phrases function.

Mindful Drilling

To many, the idea of drilling may seem to be a push in the wrong direction. We've all spent time doing homework designed to drill into us facts and procedures that turned out to be a total waste of time. That was often because we didn't know the reasons behind what we were practicing or how it fit into a broader context. Drilling problems without context is mind-numbing. However, once you've identified that it's the bottleneck preventing you from going further, they become instilled with new purpose. In ultralearning, which is directed by the student, not an external source, drills take on a new light. Instead of being forced to do them for unknown purposes, it is now up to you to find a way to enhance the learning process by accelerating learning on the specific things that you find most difficult. In this sense, drills take on a very different flavor in ultralearning as opposed to traditional learning. Far from being meaningless drudgery, carefully designed drills elicit creativity and imagination as you strive to solve a more complex learning challenge by breaking it into specific parts.

Drills are hard to do, which is why many of us would rather avoid them. When we do engage in drills, it's often in subjects where we feel competent and comfortable. Drills require the learner not only to think deeply about what is being learned but also figure out what is most difficult and attack that weakness directly rather than focus on what is the most fun or what has already been mastered. This requires strong motivation and a comfort with learning aggressively. Franklin, in his Autobiography, remarked about the lengths he went to so he could dedicate himself to his writing drills: "My time for these exercises and for reading was at night, after work or before it began in the morning." Despite the prominence writing would play in his life, Franklin still had to work long hours under his taskmaster brother in the print shop, diligently improving his craft in what little leisure time he had. Eric Barone similarly repeated his pixel art dozens of times, going back to master prerequisite concepts and theory until he got it perfect.

The difficulty and usefulness of drills repeat a pattern that will recur throughout the ultralearning principles: that something mentally strenuous provides a greater benefit to learning than something easy. Nowhere is this pattern more clear than in the next principle, retrieval, where difficulty itself may be the key to more effective learning.

Chapter 8- Principle 5; Retrieval: Test To Learn

In the spring of 1913, the mathematician G. H. Hardy received a letter that would forever define the course of his life. Sent by an accounting clerk working for the Port Trust Office of Madras in India, the letter contained a humble note of introduction along with some startling assertions. The author claimed that he had found theorems for problems that the best mathematical minds of the time had yet to solve. What's more, he claimed that he had "no University education" and had derived these results from his own solitary investigations.1

Receiving letters from amateur crackpots who claimed to have solutions to famous problems was a common occurrence for someone of Hardy's stature in mathematics, so at first he simply dismissed the letter as being more of the same. Still, flipping through the several pages of notes attached to the letter, the equations wouldn't leave his mind. When he found himself thinking about them hours later, he brought the letter to the attention of his colleague John Littlewood. As the two of them toyed at trying to prove the strange assertions, they found that some of them they were able to prove with great effort, while others remained, in Hardy's words, "scarcely possible to believe." Maybe, Hardy thought, this wasn't a letter from a crackpot but something rather different.

The formulas written were so bizarre and alien that Hardy remarked, "They must be true because, if they were not true, no one would have had the imagination to invent them." What he only vaguely understood that day was that he had just had his first introduction to one of the most brilliant and bizarre mathematicians of all time, Srinivasa Ramanujan.

Ramanujan's Genius

Before writing his letter to Hardy, which changed the course of mathematical history, Ramanujan was a poor, pudgy south Indian boy with a special love of equations. More than anything else, he loved math. In fact, his love of math often got him into difficulties. His unwillingness to study other subjects flunked him out of university. Equations were all he cared about. In his spare time and during stretches of unemployment, he would sit for hours on the bench in front of his family home, slate in hand, playing with formulas. Sometimes he would stay up so late that his mother would need to put food into his hand so he would eat.

As he was thousands of miles away from the center of mathematics of his day, access to high-quality textbooks was quite a challenge for Ramanujan. One resource he did encounter and mined extensively was a volume by George Shoobridge Carr called A Synopsis of Elementary Results in Pure and Applied Mathematics. Carr himself was hardly a towering figure of mathematical genius. The book, intended as a guide for students, included large lists of various theorems from different fields of mathematics, usually without explanation or proof. However, even without having proofs or explanations available, Carr's book became a powerful resource in the hands of someone smart and obsessed like Ramanujan. For instead of simply copying and memorizing how certain theorems were derived, he had to figure them out for himself.

Though many commentators of the time, including Hardy, argued that Ramanujan's impoverished upbringing and late access to the cutting edge of mathematics likely did irreparable harm to his genius, modern psychological

experiments may offer an alternative perspective, for when Ramanujan dealt only with Carr's extensive list of theorems using his own quirky obsession with mathematical formulas, he was unwittingly practicing one of the most powerful methods known to build a deep understanding.

The Testing Effect

Imagine you're a student preparing for an exam. You have three choices about how you can allocate your limited studying time. First, you can review the material. You can look over your notes and book and study everything until you're sure you'll remember it. Second, you can test yourself. You can keep the book shut and try to remember what was in it. Finally, you can create a concept map. You can write out the main concepts in a diagram, showing how they're organized and related to other items you need to study. If you can pick only one, which one should you choose to do best on the final exam?

This is essentially the question posed by the psychologists Jeffrey Karpicke and Janell Blunt in one study examining students' choice of learning strategy.2 In the study, students were divided into four groups, each given the same amount of time but told to use different study strategies: reviewing the text a single time, reviewing it repeatedly, free recall, and concept mapping. In each group, students were asked to predict their score on the upcoming test. Those who did repeated reviewing predicted that they'd score the best, followed by the single-study and concept-mapping groups. Those who practiced free recall (trying to remember as much as they could without looking in the book) predicted the worst for their final performance. The actual results, however, weren't even close. Testing yourself—trying to retrieve information without looking at the text—clearly outperformed all other conditions. On questions based directly on the content of the text, those who practiced free recall remembered almost 50 percent more than the other groups. How could students, who have spent years getting firsthand experience about what matters to learning, be so misguided about what actually produces results?

One might be tempted to argue that this benefit of self-testing is an artifact of the way success is measured. The principle of directness asserts that transfer is difficult. Since self-testing and actual testing are most similar, perhaps it is this similarity that allows this method to work better. Had the method of evaluation differed, it might be reasonable to suspect that review or concept mapping might come out on top. Interestingly, in another experiment, Karpicke and Blunt showed that this wasn't the explanation, either. In this experiment the final test was to produce a concept map. Despite the overwhelming similarity to the evaluation task, free recall still did better than using concept mapping to study.

Another possible explanation for why self-testing works is feedback. When you review something passively, you don't get any feedback about what you know and don't know. Since tests usually come with feedback, that might explain why students who practiced self-testing beat the concept mappers or passive reviewers. Though it is true that feedback is valuable, once again, retrieval doesn't simply reduce down to getting more feedback. In the experiments mentioned, students were asked to do free recall but weren't provided any feedback about items they missed or got wrong. The act of trying to summon up knowledge from memory is a powerful learning tool on its own, beyond its connection to direct practice or feedback.

This new perspective on learning shows how Carr's book, with its lists of

proofs without solutions, could have become, in the hands of someone sufficiently motivated to master them, an incredible tool for becoming brilliant at math. Without the answers at hand, Ramanujan was forced to invent his own solutions to the problems, retrieving information from his mind rather than reviewing it in a book.

The Paradox of Studying

If retrieval practice—trying to recall facts and concepts from memory—is so much better for learning, why don't students realize it? Why do many prefer to stick to concept mapping or the even less effective passive review, when simply closing the book and trying to recall as much as possible would help them so much more?

Karpicke's research points to a possible explanation: Human beings don't have the ability to know with certainty how well they've learned something. Instead, we need to rely on clues from our experience of studying to give us a feeling about how well we're doing. These so-called judgments of learning (JOLs) are based, in part, on how fluently we can process something. If the learning task feels easy and smooth, we are more likely to believe we've learned it. If the task feels like a struggle, we'll feel we haven't learned it yet. Immediately after spending some time studying, these JOLs may even be accurate. Minutes after studying something using a strategy of passive review, students perform better than they would if they had practiced retrieval.[3] The feeling that you're learning more when you're reading rather than trying to recall with a closed book isn't inaccurate. The problem comes after. Test again days later, and retrieval practice beats passive review by a mile. What helped in the immediate time after studying turns out not to create the long-term memory needed for actual learning to take place.

Another explanation for why students opt for low-efficiency review instead of retrieval is that they don't feel they know the material well enough to test themselves on it. In another experiment, Karpicke had students choose a strategy for learning. Inevitably, students who were performing more weakly elected to review the material first, waiting until they were "ready" to start practice testing.[4] If through experimental intervention, however, they were forced to practice retrieval earlier, they learned more. Whether you are ready or not, retrieval practice works better. Especially if you combine retrieval with the ability to look up the answers, retrieval practice is a much better form of studying than the ones most students apply.

Is Difficulty Desirable?

What makes practicing retrieval so much better than review? One answer comes from the psychologist R. A. Bjork's concept of desirable difficulty.[5] More difficult retrieval leads to better learning, provided the act of retrieval is itself successful. Free recall tests, in which students need to recall as much as they can remember without prompting, tend to result in better retention than cued recall tests, in which students are given hints about what they need to remember. Cued recall tests, in turn, are better than recognition tests, such as multiple-choice answers, where the correct answer needs to be recognized but not generated. Giving someone a test immediately after they learn something improves retention less than giving them a slight delay, long enough so that answers aren't in mind when they need them. Difficulty, far from being an obstacle to making retrieval work, may be part of the reason it does so.

The idea of desirable difficulties in retrieval makes a potent case for the ultralearning strategy. Low-intensity learning strategies typically involve either less or easier retrieval. Pushing difficulty higher and opting for testing

oneself well before you are “ready” is more efficient. One can think back to Benny Lewis’s strategy of speaking a new language from the first day. Though this approach is high in difficulty, research suggests why it might be more useful than easier forms of classroom study. Placing himself in a more difficult context means that every time Lewis needs to recall a word or phrase, it will be remembered more strongly than when doing the same act of retrieval in a classroom setting and much better than when simply looking over a list of words and phrases.

Difficulty can become undesirable if it gets so hard that retrieval becomes impossible. Delaying the first test of a newly learned fact has some benefits over testing immediately.6 However, if you delay the test too long, the information may be forgotten entirely.7 The idea, therefore, is to find the right midpoint: far enough away to make whatever is retrieved remembered deeply, not so far away that you’ve forgotten everything. Although waiting too long before you test yourself may have disadvantages, increasing difficulty by giving yourself fewer clues and prompts are likely helpful, provided that you can get some feedback on them later.

Should You Take the Final Exam Before the Class Even Begins?

The standard way of viewing tests is that they work to evaluate the knowledge you have learned elsewhere—through reading or listening to lectures. The concept of retrieval flips this view on its head, suggesting that the act of taking a test not only is a source of learning but results in more learning than a similar amount of time spent in review. However, this still fits within the conventional idea of knowledge being first acquired, and then strengthened or tested later.

An interesting observation from retrieval research, known as the forwardtesting effect, shows that retrieval not only helps enhance what you’ve learned previously but can even help prepare you to learn better.8 Regular testing of previously studied information can make it easier to learn new information. This means that retrieval works to enhance future learning, even when there is nothing to retrieve yet!

A variety of mechanisms has been proposed for explaining why this forward testing effect exists. Some researchers argue that it may be that trying to find knowledge that hasn’t been learned yet—say, by trying to solve a problem you haven’t learned the answer to yet—nonetheless helps reinforce search strategies that are put to use once the knowledge is encountered later. An analogy here is that trying to retrieve an answer that doesn’t yet exist in your mind is like laying down a road leading to a building that hasn’t been constructed yet. The destination doesn’t exist, but the path to get to where it will be, once constructed, is developed regardless. Other researchers argue that the mechanism might be one of attention. By confronting a problem you don’t yet know how to answer, your mind automatically adjusts its attentional resources to spot information that looks like a solution when you learn it later. Whatever the exact mechanism is, the reality of the forward-testing effect implies that practicing retrieval might not only benefit from starting earlier than one is “ready” but even before you have the possibility of answering correctly.

What Should Be Retrieved?

The research is clear: if you need to recall something later, you’re best off practicing retrieving it. However, this neglects an important question: What kinds of things should you invest the time in to remember in the first place?

Retrieval may take less time than review to get the same learning impact, but not learning something at all is faster still. This is an important practical question. Nobody has time to master everything. During the MIT Challenge, I covered a lot of different ideas. Some were directly relevant to the kind of programming I wanted to do when I was done, so making sure I retained those ideas was a priority. Others were interesting, but since I had no plans to use them immediately, I put more effort into practicing retrieving the underlying concepts than doing technical calculations. One class I did, for instance, was Modal Logic. As I have no plans to be a logician, I can honestly say, eight years later, that I couldn't prove theorems in modal logic today. However, I can tell you what modal logic is for and when it is used, so if a situation arises in which the techniques I learned in that class might be useful, I'd have a much better time spotting it.* There will always be some things you choose to master and others you satisfy yourself with knowing you can look up if you need to.

One way to answer this question is simply to do direct practice. Directness sidesteps this question by forcing you to retrieve the things that come up often in the course of using the skill. If you're learning a language and need to recall a word, you'll practice it. If you never need a word, you won't memorize it. The advantage of this strategy is that it automatically leads you to learn the things with the highest frequency. Things that are rarely used or that are easier to look up than to memorize won't be retrieved. These tend to be the things that don't matter so much.

The problem with relying on direct practice exclusively is that knowledge that isn't in your head can't be used to help you solve problems. For instance, a programmer may realize a need to use a certain function to solve a problem but forgets how to write it out. Needing to look up the syntax might slow her down, but she will still be able to solve the problem. However, if you don't have enough knowledge stored to recognize when you can use a function to solve your problem, no looking up can help you. Consider that over the last twenty years, the amount of knowledge easily accessible from a quick online search has exploded. Nearly any fact or concept is now available on demand to anyone with a smartphone. Yet despite this incredible advance, it is not as if the average person is thousands as times as smart as people were was a generation ago. Being able to look things up is certainly an advantage, but without a certain amount of knowledge inside your head, it doesn't help you solve hard problems.

Direct practice alone can fail to encourage enough retrieval by omitting knowledge that can help you solve a problem but isn't strictly necessary to do so. Consider our programmer who has two different ways to solve her problem, A and B. Option A is much more effective, but B will also get the job done. Now suppose that she knows only about option B. She'll continue to use the way she knows to solve the problem, even though it is less effective. Here, our fledgling programmer might read about option A on a blog somewhere. But since simply reading is much less effective than repeated retrieval practice, chances are that she'll forget about it when it comes time to apply the technique. This may sound abstract, but I'd argue that this is quite common with programmers, and often the thing separating mediocre programmers from great ones isn't the range of problems they can solve but that the latter often know dozens of ways to solve problems and can select the best one for each situation. This kind of breadth requires a certain amount of passive exposure, which in turn benefits from retrieval practice.

How to Practice Retrieval

Retrieval works, but it isn't always easy. Not only is the effort itself an obstacle, but sometimes it's not clear exactly how to do it. Passive review may not be very efficient, but at least it's straightforward: you open your book and reread material until you retain it. Most books and resources don't have a handy list of questions at the end to test you to see if you remember what they contain. To help with that, below are some useful methods that can be used to apply retrieval to almost any subject.

Tactic 1: Flash Cards

Flash cards are an amazingly simple, yet effective, way to learn paired associations between questions and answers. The old way of creating paper flash cards to drill yourself is powerful, but it has largely been superseded by spaced-repetition systems, as I'll discuss in Principle 7. These software algorithms can handle tens of thousands of "cards" and also organize a review schedule so you can manage them.

The major drawback of flash cards is that they work really well for a specific type of retrieval—when there's a pairing between a specific cue and a particular response. For some forms of knowledge, for example memorizing foreign-language vocabulary, this works perfectly. Similarly, maps, anatomical diagrams, definitions, and equations can often be memorized via flash cards. However, when the situation in which you need to remember the information is highly variable, this kind of practice can have drawbacks. Programmers can memorize syntax via flash cards, but concepts that need to be applied in real programs often don't fit the cue-response framework that flash cards demand.

Tactic 2: Free Recall

A simple tactic for applying retrieval is, after reading a section from a book or sitting through a lecture, to try to write down everything you can remember on a blank piece of paper. Free recall like this is often very difficult, and there will be many things missed, even if you just finished reading the text in question. However, this difficulty is also a good reason why this practice is helpful. By forcing yourself to recall the main points and arguments, you'll be able to remember them better later. While doing research for this book, for instance, I would often print out journal articles and put them in a binder with a few blank sheets of paper after each of them. After I had finished reading, I'd do a quick free recall exercise to make sure I would retain the important details when it came time for writing.

Tactic 3: The Question-Book Method

Most students take notes by copying the main points as they encounter them. However, another strategy for taking notes is to rephrase what you've recorded as questions to be answered later. Instead of writing that the Magna Carta was signed in 1215, you could instead write the question "When was the Magna Carta signed?" with a reference to where to find the answer in case you forget. By taking notes as questions instead of answers, you generate the material to practice retrieval on later.

One mistake I've made in applying this technique is to focus on the wrong kinds of things to ask questions about. I tried applying this method to a book on computational neuroscience, and I ended up asking myself all sorts of detailed questions such as what was the firing rate of certain neuronal circuits or who proposed a specific theory. That wasn't intentional but rather a byproduct of lazily restating the factual content in the book as questions. What's harder and more useful is to restate the big idea of a chapter or section as a

question. Since this is often implicit, it requires some deeper thinking and not just adding a question mark to some notes you copied verbatim. One rule I've found helpful for this is to restrict myself to one question per section of a text, thus forcing myself to acknowledge and rephrase the main point rather than zoom in on a detail that will be largely irrelevant later.

Tactic 4: Self-Generated Challenges

The above tactics work best with retrieval of simple information, such as facts or summaries of broad ideas you might encounter in a book or lecture. However, if you're trying to practice a skill, not merely remember information, they might not be enough. For a programmer, it's not enough to know what an algorithm means, but be able to write it in code. In this case, as you go through your passive material, you can create challenges for yourself to solve later. You may encounter a new technique and then write a note to demonstrate that technique in an actual example. Creating a list of such challenges can serve as a prompt for mastering that information later in practice and can expand your library of tools that you are able to actually apply.

Tactic 5: Closed-Book Learning

Nearly any learning activity can become an opportunity for retrieval if you cut off the ability to search for hints. Concept mapping, the strategy that didn't work particularly well for students in Karpicke and Blunt's experiments, could be beefed up considerably by preventing yourself from looking at the book when generating your concept map. I suspect that had this been done in the original experiment, students using this form of closedbook concept mapping would likely have done better on the eventual test that relied on creating a concept map. Any practice, whether direct or a drill, can be cut off from the ability to look things up. By preventing yourself from consulting the source, the information becomes knowledge stored inside your head instead of inside a reference manual.

Revisiting Ramanujan

Ramanujan was smart, there's no denying it. However, his genius was aided immeasurably by two hallmarks of the ultralearner's tool kit: obsessive intensity and retrieval practice. As he worked on his slate from morning to night, trying to figure out Carr's sparsely written list of theorems was incredibly hard work. But it also created the desirable difficulties that allowed him to build a huge mental library of tools and tricks that would assist him in his later mathematical efforts.

Retrieval played an important role in Ramanujan's mathematical upbringing, but he is hardly the only one to take advantage of the tactic. In nearly every biography of great geniuses and contemporary ultralearners I have encountered, some form of retrieval practice is mentioned. Benjamin Franklin practiced his writing by reconstructing essays from memory. Mary Somerville worked through problems mentally when no candle was available for night reading. Roger Craig practiced trivia questions without looking at the answers. Retrieval is not a sufficient tool to create genius, but it may be a necessary one.

Trying to produce the answer rather than merely reviewing it is only half of a bigger cycle, however. To make retrieval really effective, it helps to know whether the answer you dredged up from your mind was correct. Just as we often avoid testing ourselves until we're ready because struggling with a test is uncomfortable, we often avoid seeking information about our skill level until we think it will be favorable. Being able to process that

information effectively, hearing the message it contains loud and clear, isn’t always easy. Yet this is also why it is so important. This brings us to the next principle of ultralearning: feedback.

Chapter 9: Principle 6 Feedback: Don’t Dodge the Punches

From a narrow staircase in the back, Chris Rock enters the stage just as his name is being announced. With sold-out shows and HBO specials, Rock is no neophyte to stand-up comedy. His performances feel like a rock concert. With an energetic and punctuated delivery, he’s known for repeating the key phrase of a joke like the chorus of a song, the rhythm of it so precise that you get the feeling he would be able to make anything funny. And that’s exactly the problem. When everything you do is funny, how do you know what really makes a joke good?

Far from the packed concert halls and jubilant crowds, Rock walks to the mic on the modest brick-backed stage at the Comedy Cellar in Greenwich Village, New York City. In his hand are scraps of cards on which he has scribbled bits of phrases, a trick for working out new material he learned from his grandfather, a cab driver who preached on weekends. Instead of his signature aggressive style, he slumps against the back wall. This is his laboratory, and he’s going to perform comedy with the precision of an experiment.

“It’s not going to be that good,” Rock warns the crowd, who are stunned at his unannounced arrival on the small comedy stage. “Not at these prices,” he adds, joking “At these prices, I could leave right now!” He envisions the reviews: “Chris came out and he left. It was good! He didn’t tell any jokes—but it was good!” Notes in hand, Rock warns the audience playfully that this isn’t going to be a typical Chris Rock performance. Instead, he wants to work out new material under controlled conditions. “They’ll give you about six minutes because you’re famous,” he explains. “. . . then you’re back to square one.” He wants to know what’s funny, when he’s not trying to be funny.[1]

Rock’s method is not unique. The Comedy Cellar is famous for big-name drop-ins: Dave Chappelle, Jon Stewart, and Amy Schumer are just a few comedians who have tested out their material in front of small crowds here before performing it on prime-time specials and in concert-scale gigs. Why perform at a small club when you can easily draw large crowds and thousands of dollars from a huge performance? Why show up unannounced and then deliberately undersell your own comedic abilities? What Rock and these other famous comedians recognize is the importance of the sixth principle of ultralearning: feedback.

The Power of Information

Feedback is one of the most consistent aspects of the strategy ultralearners use. From the simple feedback of Roger Craig testing himself on Jeopardy! clues without knowing the answer to the uncomfortable feedback of Benny Lewis’s approach of walking up to strangers to speak a language he only started learning the day prior, getting feedback was one of the most common tactics of the ultralearners I encountered. What often separated the ultralearning strategy from more conventional approaches was the immediacy, accuracy, and intensity of the feedback being provided. Tristan de Montebello could have taken the normal route of carefully preparing his script and then delivering a speech once every month or two, as is the case for most Toastmasters. Instead he dove straight in, speaking several times per week, jumping among different clubs to gather different perspectives on his performance. This deep dive into feedback was uncomfortable, but the rapid immersion also desensitized him to a lot of the anxiety that being onstage can create.

Feedback features prominently in the research on deliberate practice, a scientific theory of the acquisition of expertise initiated by K. Anders Ericsson and other psychologists. In his studies, Ericsson has found that the ability to gain immediate feedback on one's performance is an essential ingredient in reaching expert levels of performance. No feedback, and the result is often stagnation—long periods of time when you continue to use a skill but don't get any better at it. Sometimes the lack of feedback can even result in declining abilities. Many medical practitioners get worse with more experience as their accumulated knowledge from medical school begins to fade and the accuracy of their diagnoses is not given the rapid feedback that would normally promote further learning.2

Can Feedback Backfire?

The importance of feedback probably isn't too surprising; we all intuitively sense how getting information about what we're doing right and wrong can accelerate learning. More interestingly, the research on feedback shows that more isn't always better. Crucially, what matters is the type of feedback being given.

In a large meta-analysis, Avraham Kluger and Angelo DeNisi looked at hundreds of studies on the impact of providing feedback for learning.3 Though the overall effect of feedback was positive, it's important to note that in over 38 percent of cases, feedback actually had a negative impact. This leads to a confusing situation. On the one hand, feedback is essential for expert attainment, as demonstrated by the scientific studies of deliberate practice. Feedback also figures prominently in ultralearning projects, and it's difficult to imagine their being successful if their sources of feedback had been turned off. At the same time, a review of the evidence doesn't paint the picture of feedback being universally positive. What's the explanation?

Kluger and DeNisi argue that the discrepancy is in the type of feedback that is given. Feedback works well when it provides useful information that can guide future learning. If feedback tells you what you're doing wrong or how to fix it, it can be a potent tool. But feedback often backfires when it is aimed at a person's ego. Praise, a common type of feedback that teachers often use (and students enjoy), is usually harmful to further learning. When feedback steers into evaluations of you as an individual (e.g., "You're so smart!" or "You're lazy"), it usually has a negative impact on learning.

Further, even feedback that includes useful information needs to be correctly processed as a motivator and tool for learning. Kluger and DeNisi noted that some of the studies that showed a negative impact of feedback occurred because the subjects themselves chose not to use the feedback constructively. They may have rejected the feedback, lowered the standards they expect from themselves, or given up on the learning task altogether. The researchers note that who is giving the feedback can matter, as feedback coming from a peer or teacher has important social dynamics beyond mere information on how to improve one's abilities.

I find two things interesting about this research. First, it is clear that although informative feedback is beneficial, it can backfire if it is processed inappropriately or if it fails to provide useful information. This means that when seeking feedback, the ultralearner needs to be on guard for two possibilities. The first is overreacting to feedback (both positive and negative) that doesn't offer specific information that leads to improvement. Ultralearners need to be sensitive to what feedback is actually useful and tune out the rest. This is why, although all the ultralearners I met employed

feedback, they didn't act on every piece of possible feedback. Eric Barone, for instance, did not attend to every comment and critique on early drafts of his game. In many cases he ignored them, when the feedback conflicted with his vision. Second, when it is incorrectly applied, feedback can have a negative impact on motivation. Not only can overly negative feedback lower your motivation, but so can overly positive feedback. Ultralearners must balance both concerns, pushing for the right level of feedback for their current stage of learning. Though we all know (and instinctively avoid) harsh and unhelpful criticism, the research also supports Rock's strategy of disregarding the positive feedback that his celebrity automatically generates.
The second interesting point about this research is that it explains why feedback-seeking efforts are often underused and thus remain a potent source of comparative advantage for ultralearners. Feedback is uncomfortable. It can be harsh and discouraging, and it doesn't always feel nice. Standing up on a stage in a comedy club to deliver jokes is probably one of the best ways to get better at stand-up comedy. But the act itself can be terrifying, as an awkward silence cuts deep. Similarly, speaking immediately in a new language can be painful, as the sense of your ability to communicate goes down precipitously from when you use your native tongue.
Fear of feedback often feels more uncomfortable than experiencing the feedback itself. As a result, it is not so much negative feedback on its own that can impede progress but the fear of hearing criticism that causes us to shut down. Sometimes the best action is just to dive straight into the hardest environment, since even if the feedback is very negative initially, it can reduce your fears of getting started on a project and allow you to adjust later if it proves too harsh to be helpful.
All of these acts require self-confidence, resolve, and persistence, which is why many self-directed learning efforts ignore seeking the aggressive feedback that could generate faster results. Instead of going to the source, taking feedback directly, and using that information to learn quickly, people often choose to dodge the punches and avoid a potentially huge source of learning. Ultralearners acquire skills quickly because they seek aggressive feedback when others opt for practice that includes weaker forms of feedback or no feedback at all.
What Kind of Feedback Do You Need?
Feedback shows up in many different forms for different types of learning projects. Getting good at stand-up comedy and learning to write computer programs involve very different kinds of feedback. Learning higher math and learning languages are going to use feedback in different ways. The opportunities for seeking better feedback will vary depending on what you're trying to learn. Rather than try to spell out exactly what feedback you need for your learning project, I think it's important to consider different types of feedback, along with how each one can be used and cultivated. By knowing what kind of feedback you're getting, you can make sure to use it best, while also recognizing its limitations. In particular, I want to consider three types of feedback: outcome feedback, informational feedback, and corrective feedback. Outcome feedback is the most common and in many situations the only type of feedback available. Informational feedback is also fairly common, and it's important to recognize when you can split apart outcomes to get feedback on parts of what you're learning and when feedback only on holistic outcomes is possible. Corrective feedback is the toughest to find but when employed well can accelerate learning the most.

Outcome Feedback: Are You Doing It Wrong?

The first type of feedback, and the least granular, is outcome feedback. This tells you something about how well you're doing overall but offers no ideas as to what you're doing better or worse. This kind of feedback can come in the form of a grade—pass/fail, A, B, or C—or it can come in the form of an aggregate feedback to many decisions you're making simultaneously. The applause Tristan de Montebello received (or the crickets he heard) after a speech is an example of outcome feedback. It could tell him if he was getting better or worse, but it couldn't really say why or how to fix it. Every entrepreneur experiences this kind of feedback when a new product hits the market. It may sell wildly well or abysmally, but that feedback comes in bulk, not directly decomposable into the various aspects of the product. Did the product cost too much? Was the marketing message not clear enough? Was the packaging unappealing? Customer reviews and comments can provide clues, but ultimately the success or failure of any new product is a complex bundle of factors.

This type of feedback is often the easiest to get, and research shows that even getting this feedback, which lacks a specific message about what you need to improve, can be helpful. In one study, feedback for a task involving visual acuity facilitated learning, even when it was delivered in blocks that were too large to get any meaningful information about which responses were correct and which were incorrect.4 Many projects that wholly lack feedback can easily be changed to get this broad-scale feedback. Eric Barone, for instance, provided a development blog to publish work on his game and solicit feedback from early drafts. It couldn't provide him with detailed information about what exactly to improve and change, but his simply being immersed in an environment that provided feedback at all was helpful.

Outcome feedback can improve how you learn through a few different mechanisms. One is by providing you with a motivational benchmark against your goal. If your goal is to reach a certain quality of feedback, this feedback can give you updates on your progress. Another is that it can show you the relative merits of different methods you're trying. When you are progressing rapidly, you can stick to those learning methods and approaches. When progress stalls, you can see what you might be able to change in your current approach. Although outcome feedback isn't complete, it is often the only kind available and can still have a potent impact on your learning rate.

Informational Feedback: What Are You Doing Wrong?

The next type of feedback is informational feedback. This feedback tells you what you're doing wrong, but it doesn't necessarily tell you how to fix it. Speaking a foreign language with a native speaker who doesn't share a language with you is an exercise in informational feedback. That person's confused stare when you misuse a word won't tell you what the correct word is, but it will tell you that you're getting it wrong. Tristan de Montebello, in addition to the overall assessment of his performance by audience members at the end of a speech, can also get live informational feedback about how it's going moment to moment. Did that joke work? Is my story boring them? This is something you can spot in the distracted glances or background chatter throughout your speech. Rock's stand-up experiment is also a type of informational feedback. He can tell when a certain joke lands or doesn't, based on the reaction of the audience. However, they can't tell him what to do to make it funnier—he's the comedian, not them.

This kind of feedback is easy to obtain when you can get real-time access

to a feedback source. A computer programmer who gets error messages when her programs don't compile properly may not have enough knowledge to understand what she's doing wrong. But as errors increase or diminish, depending on what she does, she can use that signal to fix her problems. Selfprovided feedback is also ubiquitous, and in some pursuits it can be almost as good as feedback from others. When painting a picture, you can simply look at it and get a sense of whether your brushstrokes are adding to or detracting from the image you want to convey. Because this kind of feedback often comes from direct interaction with the environment, it often pairs well with the third principle, directness.

Corrective Feedback: How Can You Fix What You're Doing Wrong?

The best kind of feedback to get is corrective feedback. This is the feedback that shows you not only what you're doing wrong but how to fix it. This kind of feedback is often available only through a coach, mentor, or teacher. However, sometimes it can be provided automatically if you are using the right study materials. During the MIT Challenge, I did most of my practice by going back and forth between assignments and their solutions, so that when I finished a problem, I was shown not only whether I had gotten it right or wrong but exactly how my answer differed from the correct one. Similarly, flash cards and other forms of active recall provide corrective feedback by showing you the answer to a question after you make your guess.

The educators Maria Araceli Ruiz-Primo and Susan M. Brookhart argue, "The best feedback is informative and usable by the student(s) who receive it. Optimal feedback indicates the difference between the current state and the desired learning state AND helps students to take a step to improve their learning."[5]

The main challenge of this kind of feedback is that it typically requires access to a teacher, expert, or mentor who can pinpoint your mistakes and correct them for you. However, sometimes the added edge of having corrective over merely informational feedback can be worth the effort needed to find such people. Tristan de Montebello worked with Michael Gendler to help him with his public speaking performance, and that helped him spot subtle weaknesses in his presentations that would have gone unnoticed by himself or by a less experienced audience member giving broader feedback. This type of feedback trumps outcome feedback, which can't indicate what needs improving, and informational feedback, which can indicate what to improve but not how. However, it can also be unreliable. Tristan de Montebello would often get conflicting advice after delivering a speech; some audience members would tell him to slow down, while others said to speed up. This can also be a situation in which paying for a tutor can be useful, because that person can spot the exact nature of your mistake and correct it with less struggle on your part. The self-directed nature of ultralearning shouldn't convince you that learning is best done as an entirely solitary pursuit.

Further Notes on Types of Feedback

A few things are worth noting here. First, you need to be careful when trying to "upgrade" feedback from a weaker form to a stronger form if it's not actually possible. To switch from outcome feedback to informational feedback, you need to be able to elicit feedback on a per element basis of what you're doing. If instead the feedback is being provided as a holistic assessment of everything you're doing, trying to turn it into informational

feedback can backfire. Game designers know to watch out for this, because asking play testers what they don't like about a game can often return spurious results: for example, they don't like the color of the character or the background music. The truth is, the players are evaluating the game holistically, so they often can't offer this kind of feedback. If their responses come from using it as a whole, not from each aspect individually, asking for greater specificity may lead to guesses from those giving feedback.
Similarly, corrective feedback requires a "correct" answer or the response of a recognized expert. If there is no expert or a single correct approach, trying to turn informational feedback into corrective feedback can work against you when the wrong change is suggested as an improvement. De Montebello noted to me that the advice most people gave him wasn't terribly useful, but the consistency of it was. If his speech elicited wildly different reactions each time, he knew there was still a lot of work to do. When the speech started to get much more consistent comments, he knew he was onto something. This illustrates that ultralearning isn't simply about maximizing feedback but also knowing when to selectively ignore elements of it to extract the useful information. Understanding the merits of these different types of feedback, as well as the preconditions that make them possible, is a big part of choosing the right strategy for an ultralearning project.

How Quick Should Feedback Be?

An interesting question in the research on feedback is how quick it should be. Should you get immediate information about your mistakes or wait some period of time? In general, research has pointed to immediate feedback being superior in settings outside of the laboratory. James A. Kulik and Chen-Lin C. Kulik review the literature on feedback timing and suggest that "Applied studies using actual classroom quizzes and real learning materials have usually found immediate feedback to be more effective than delay."[6] Expertise researcher K. Anders Ericsson agrees, arguing in favor of immediate feedback when it assists in identifying and correcting mistakes and when it allows one to execute a corrected version of their performance revised in response to the feedback.[7]
Interestingly, laboratory studies tend to show that delaying the presentation of the correct response along with the original task (delayed feedback) is more effective. The simplest explanation of this result is that presenting the question and answer again offers a second, spaced exposure to the information. If this explanation were correct, all it would mean is that that immediate feedback is best paired with delayed review (or further testing) to strengthen your memory compared with a single exposure. I'll cover more on spacing and how it impacts your memory in the next chapter on retention.
Despite the superficially mixed results on the timing of feedback from the scientific literature, I generally recommend faster feedback. This enables a quicker recognition of mistakes. However, there's a possible risk that this recommendation might backslide into getting feedback before you've tried your best to answer the question or solve the problem at hand. Early studies on feedback timing tended to show a neutral or negative impact of immediate feedback on learning. In those studies, however, experimenters often gave subjects the ability to see the correct answer before subjects had finished filling out the prompt.[8] That meant subjects could often copy the correct answer rather than try to retrieve it. Feedback too soon may turn your retrieval practice effectively into passive review, which we already know is less effective for learning. For hard problems, I suggest setting yourself a

timer to encourage you to think hard on difficult problems before giving up to look at the correct answer.

How to Improve Your Feedback

By now you see the importance of feedback to your learning efforts. I've explained why feedback, especially when delivered to others, can sometimes backfire. I've also showed how the three types—outcome, informational, and corrective—have different strengths and the preconditions that need to be in place in order to make them effective. Now I want to focus on some concrete tactics you can apply to get better feedback.

Tactic 1: Noise Cancellation

Anytime you receive feedback, there are going to be both a signal—the useful information you want to process—and noise. Noise is caused by random factors, which you shouldn't overreact to when trying to improve. Say you're writing articles that you post online, trying to improve your writing ability. Most of them won't attract much attention, and when they do, it's often because of factors outside of your control; for example, just the right person happens to share it, causing it to spill across social networks. The quality of your writing does drive these factors, but there's enough randomness that you need to be careful not to change your entire approach based on one data point. Noise is a real problem when trying to improve your craft because you need to do far more work to get the same information about how to write well. By modifying and selecting the streams of feedback you pay attention to, you can reduce the noise and get more of the signal.

A noise-cancelling technique used in audio processing is filtering. Sound engineers know that human speech tends to fall within a particular range of frequencies, whereas white noise is all over the spectrum. They can boost the signal, therefore, by amplifying the frequencies that occur in human speech and quieting everything else. One way to do this is to look for proxy signals. These don't exactly equal success, but they tend to eliminate some of the noisy data. For blog writing, one way to do so would be to use tracking code to figure out what percentage of people read your articles all the way to the end. This doesn't prove your writing is good, but it's a lot less noisy than raw traffic data.

Tactic 2: Hitting the Difficulty Sweet Spot

Feedback is information. More information equals more opportunities to learn. A scientific measure of information is based on how easily you can predict what message it will contain. If you know that success is guaranteed, the feedback itself provides no information; you knew it would go well all along. Good feedback does the opposite. It is very hard to predict and thus gives more information each time you receive it.

The main way this impacts your learning is through the difficulty you're facing. Many people intuitively avoid constant failure, because the feedback it offers isn't always helpful. However, the opposite problem, of being too successful, is more pervasive. Ultralearners carefully adjust their environment so that they're not able to predict whether they'll succeed or fail. If they fail too often, they simplify the problem so they can start noticing when they're doing things right. If they fail too little, they'll make the task harder or their standards stricter so that they can distinguish the success of different approaches. Basically, you should try to avoid situations that always make you feel good (or bad) about your performance.

Tactic 3: Metafeedback

Typical feedback is performance assessment: your grade on a quiz tells you

something about how well you know the material. However, there's another type of feedback that's perhaps even more useful: metafeedback. This kind of feedback isn't about your performance but about evaluating the overall success of the strategy you're using to learn.

One important type of metafeedback is your learning rate. This gives you information about how fast you're learning, or at least how fast you're improving in one aspect of your skill. Chess players might track their Elo ratings growth. LSAT studiers might track their improvements on mock exams. Language learners might track vocabulary learned or errors made when writing or speaking. There are two ways you can use this tool. One is to decide when you should focus on the strategy you're already using and when you should experiment with other methods. If your learning rate is slowing to a trickle, that might mean you're hitting diminishing returns with your current approach and could benefit from different kinds of drills, difficulties, or environments. A second way you can apply metafeedback is by comparing two different study methods to see which works better. During the MIT Challenge, I'd often split up questions from different subtopics before testing myself on an exam and try different approaches side by side. Does it work better to dive straight into trying to answer questions or to spend a little time to try to see that you understand the main concepts first? The only way you can know is to test your own learning rates.

Tactic 4: High-Intensity, Rapid Feedback

Sometimes the easiest way to improve feedback is simply to get a lot more of it a lot more often. This is particularly true when the default mode of learning involves little or infrequent feedback. De Montebello's strategy of improving public speaking relied largely on getting far more frequent exposure to the stage than most speakers do. Lewis's language immersion exposes him to information about his pronunciation at a point when most students still haven't uttered a word. High-intensity, rapid feedback offers informational advantages, but more often the advantage is emotional, too. Fear of receiving feedback can often hold you back more than anything. By throwing yourself into a high-intensity, rapid feedback situation, you may initially feel uncomfortable, but you'll get over that initial aversion much faster than if you wait months or years before getting feedback.

Being in such a situation also provokes you to engage in learning more aggressively than you might otherwise. Knowing that your work will be evaluated is an incredible motivator to do your best. This motivational angle for committing to high-intensity feedback may end up outweighing the informational advantage it provides.

Beyond Feedback

Receiving feedback isn't always easy. If you process it as a message about your ego rather than your skills, it's easy to let a punch become a knockout. Though carefully controlling the feedback environment so it is maximally encouraging may be a tantalizing option, real life rarely affords such an opportunity. Instead, it's better to get in and take the punches early so that they don't put you down for the count. Though short-term feedback can be stressful, once you get into the habit of receiving it, it becomes easier to process without overreacting emotionally. Ultralearners use this to their advantage, exposing themselves to massive amounts of feedback so that the noise can be stripped away from the signal.

Feedback and the information it provides, however, is useful only if you remember the lessons it teaches. Forgetting is human nature, so it is not

enough to learn; you also need to make the information stick. This brings us to the next principle of ultralearning, retention, in which we'll discuss strategies that will ensure the lessons you learn aren't forgotten.

Chapter 10- Principle 7: Retention: Don't Fill A Leaky Bucket

In the small Belgian city of Louvain-la-Neuve, Nigel Richards has just won the World Scrabble Championships. On its own, this isn't too surprising. Richards has won a championship three times before, and both his prowess with the game and his mysterious personality have made him something of a legend in competitive Scrabble circles. This time, however, is different: instead of the original English-language version of the famous crossword game, Richards has won the French World Championship. This is a much harder feat: most English dictionary versions have roughly 200,000 valid word entries; French, with its gendered nouns and adjectives and copious conjugations, has nearly double that with around 386,000 valid word forms.1 To pull off such a feat is quite remarkable, even more so due to one simple fact: Richards doesn't speak French.

Richards, an engineer born and raised in Christchurch, New Zealand, is an unusual character. With his long beard and retro aviator sunglasses, he looks like a cross between Gandalf and Napoleon Dynamite. His skills at Scrabble, however, are no joke. A late starter to the game, his mother encouraged him to start in his late twenties, saying "Nigel, since you're no good at words, you won't be good at this game, but it will keep you occupied."2 From those inauspicious beginnings Richards has gone on to dominate the competitive Scrabble scene. Some people even argue that he may be the greatest player of all time.

In case you've been living under a rock, Scrabble is based on forming crosswords. Each player has seven letter tiles, drawn from a bag, with which to form words. The catch is that the words must link up with the words already on the board. To be a good player requires a voluminous memory, not only of the words we use every day but of obscure words that are useful because of their length or the letters they contain. A decent casual player quickly learns all the valid two-letter words, including unusual ones such as "AA" (a type of lava) and "OE" (a windstorm in the Faroe Islands). To perform at tournament level, however, requires memorizing nearly all of the short words, as well as longer seven- and eight-letter words, since if a player uses up all seven tiles in one turn, there is an extra fifty-point bonus (or "bingo," in Scrabble jargon). Memory, however, isn't the only skill needed. Like other competitive games, tournament Scrabble uses a timing system, so skilled players must not only be able to construct valid words from a scrambled set of tiles but quickly find spaces and calculate which words will score the most points. In this regard, Richards is a master: given the tiles CDHLRN and one blank (which can be used for any letter), Richards ignored the obvious CHILDREN and instead linked up multiple crosswords to make the even higher scoring CHLORODYNE.

Richards's virtuosity is only intensified by the mystery that surrounds it. He is quiet and mostly keeps to himself. He refuses all interviews with reporters and seems completely uninterested in fame, fortune, or even providing explanations for how he does it. A fellow competitor, Bob Felt, bumping into Richards at a tournament noted his monklike serenity, telling him "When I see you, I can never tell whether you've won or lost." "That's because I don't care" was Richard's monotone response.3 Even his competing in Belgium, which briefly pulled him into the international media spotlight, was done as an excuse to do a cycling trip through Europe. In fact, prior to his victory, he had spent only nine weeks preparing. After he beat a

Francophone player, Schelick Ilagou Rekawe from Gabon, in the final match, he was given a standing ovation but needed a translator to thank the audience.

What Is Nigel Richards's Secret?

The more I read about Nigel Richards, the more intrigued I became. Richards was as mysterious as he was incredible in his mnemonic abilities. He steadfastly ignores opportunities for interviews and is famously laconic in descriptions of his methods. After his victory in Louvain-la-Neuve, one reporter asked him if he had any special methods for memorizing all those words. "No" was Richards's monosyllabic response. Still, even if he wouldn't divulge his strategies publicly, perhaps some digging could reveal clues.

The first thing I discovered was that although Richards's victory in Belgium was astounding, it wasn't entirely without precedent. Other players of the game have won World Championships without being fluent in the language of competition. Scrabble is particularly popular in Thailand, for instance, and two former world champions, Panupol Sujjayakorn and Pakorn Nemitrmansuk, are not fluent in English. The reason is simple: remembering words in one's native language and remembering words in Scrabble are different mnemonic feats. In spoken language, the meaning of a word, its pronunciation, and its feel are important. In Scrabble, those things don't matter; words are just combinations of letters. Richards could win at French Scrabble without speaking French because the game wasn't much different from English; he just had to memorize different patterns of letters. A native speaker has an advantage, of course, since many spellings will already be familiar. But there will still be a large number of arcane and unfamiliar words to memorize, and the skill of rearranging the letters into valid board positions and calculating to achieve maximal points remains the same in every language in which Scrabble can be played.

The next piece of the puzzle I discovered was that Scrabble, it turns out, isn't the only activity in which Richards possesses a strange intensity. His other love is cycling. Indeed, in an early tournament in Dunedin, New Zealand, he got onto his bicycle after work finished, pedaled through the night from Christchurch to Dunedin, a distance of over two hundred miles, without sleeping, and started the tournament first thing in the morning. After he won, competitors he met at the tournament offered to give him a ride home. He politely declined, preferring to bicycle back the entire way home to Christchurch for another sleepless night before starting work again Monday morning.4 At first that felt like just another odd quirk in his profile, like his home-done haircuts and reluctance to be interviewed. Now, though, I believe it may hold some keys to unlocking some of his mystery.

Cycling, of course, isn't a great mnemonic technique. If it were, Lance Armstrong would have been a fierce contender. However, it does illustrate a common theme in Richards's personality that overlaps with that of other ultralearners I have encountered: an obsessive intensity that exceeds what is considered a normal investment of effort. Richards's cycling, it turns out, also lines up well with the only other clues I've been able to uncover about his methods: he reads lists; long lists of words, starting with two-letter words and then moving up. "The cycling helps," he explains, "I can go through lists in my mind."5 He reads the dictionary, focusing exclusively on combinations of letters, ignoring definitions, tenses, and plurals. Then, drawing from memory, he repeats them over and over again as he cycles for hours. This aspect also corresponds with a method that is common to other ultralearners

and that has shown up in other principles of learning so far: active recall and rehearsal. By retrieving words, Richards likely takes his already impressive memory and makes it unassailable through active practice.

There are other clues about Richards's performance: he focuses on memory, not anagramming (rearranging the tiles to create words); he works forward and backward, starting from small words, going on to big ones and back again; he claims to recall the words visually, as he cannot remember words when they're spoken. All of these clues provide glimpses into Richards's mind, but they leave out even more than they reveal. How many times does he have to read the words from his list before he can rehearse it mentally? Are the words organized in some way or just listed alphabetically? Is he a savant with exceptional abilities and lower-than-normal general intelligence or an all-round genius for whom memorizing Scrabble words is just one of many impressive abilities? Maybe his intelligence is quite average and his dominance in Scrabble represents his extreme dedication to the game. We might never know the answers to those questions.

I certainly can't rule out the theory that Richards's mind is simply hardwired differently or better for memory than my own. After all, nothing I've encountered so far about his method is so boldly original that serious Scrabble players would be unaware of it. Yet Richards has completely dominated his competition. Part of me suspects that his intense, obsessive personality, which enables him to cycle for hours reviewing lists mentally, might also form at least a partial explanation. Whatever gifts he might possess, he also seems to possess the ultralearner ethos I've described thus far in the book. For whatever it is worth, Richards himself argues for more of the latter than the former: "It's hard work, you have to have dedication to learn,"[6] elsewhere adding "I'm not sure there is a secret, it's just a matter of learning the words."[7]

Scrabble words may not be important to your life. However, memory is essential to learning things well. Programmers must remember the syntax for the commands in their code. Accountants need to memorize ratios, rules, and regulations. Lawyers must remember precedents and statutes. Doctors need to know tens of thousands of factoids, from anatomical descriptions to drug interactions. Memory is essential, even when it is wrapped up in bigger ideas such as understanding, intuition, or practical skill. Being able to understand how something works or how to perform a particular technique is useless if you cannot recall it. Retention depends on employing strategies so the things you learn don't leak out of your mind. Before discussing strategies of retention, however, let's take a look at why remembering things is so difficult.

Why Is It So Hard to Remember Things?

Richards is an extreme case, but his story nonetheless illustrates many themes that are important for anyone who wants to learn something: How can you retain all of the things you learn? How can you defend against forgetting hard-won facts and skills? How can you store the knowledge you've acquired so that it can be easily retrieved exactly when you need it? In order to understand learning, you need to understand how and why you forget.

Losing access to previously learned knowledge has been a perennial problem for educators, students, and psychologists. Fading knowledge impacts the work you do as well. One study reported that doctors give worse medical care the longer they have worked, as their stored knowledge from medical school is gradually forgotten, despite their working in the profession

full-time. Quoting from the original abstract:

Physicians with more experience are generally believed to have accumulated knowledge and skills during years in practice and therefore to deliver high-quality care. However, evidence suggests that there is an inverse relationship between the number of years that a physician has been in practice and the quality of care that the physician provides.[8]

Hermann Ebbinghaus, in one of the first psychological experiments in history, spent years memorizing nonsense syllables, much in the same way Richards memorizes Scrabble words, and carefully tracking his ability to recall them later. From this original research, later verified by more experimentally robust studies, Ebbinghaus discovered the forgetting curve. This curve shows that we tend to forget things incredibly quickly after learning them, there being an exponential decay in knowledge, which is steepest right after learning. However, Ebbinghaus noted, this forgetting tapers off, and the amount of knowledge forgotten lessens over time. Our minds are a leaky bucket; however, most of the holes are near the top, so the water that remains at the bottom leaks out more slowly.

Over the intervening years, psychologists have identified at least three dominant theories to help explain why our brains forget much of what we initially learn: decay, interference, and forgotten cues. Though the jury is still out on the exact mechanism underlying human long-term memory, these three ideas likely form some part of explaining why we tend to forget things and, conversely, provide insight into how we might better retain what we've learned.

Decay: Forgetting with Time

The first theory of forgetting is that memories simply decay with time. This idea does seem to match common sense. We remember events, news, and things learned in the past week much more clearly than things from last month. Things learned this year are recalled with much greater accuracy than events from a decade ago. By this understanding, forgetting is simply an inevitable erosion by time. Like sands in an hourglass, our memories inexorably slip away from us as we become more distant from them.

There are flaws with this theory being the complete explanation, however. Many of us can vividly recall events from early childhood, even if we can't remember what we ate for breakfast last Tuesday. There also seem to be patterns in which things are remembered and which are forgotten that go beyond the time since they were originally learned: vivid, meaningful things are more easily recalled than banal or arbitrary information. Even if there is a component to our forgetting that is simply decay, it seems exceedingly unlikely that this is the only factor.

Interference: Overwriting Old Memories with New Ones

Interference suggests a different idea: that our memories, unlike the files of a computer, overlap one another in how they are stored in the brain. In this way, memories that are similar but distinct can compete with one another. If you're learning programming, for instance, you may learn what a for loop is and remember it in terms of doing something repeatedly. Later, you may learn about while loops, recursion, repeat-until loops, and go-to statements. Now, each of these has to do with doing something repeatedly, but in different ways, so they may interfere with your ability to remember correctly what a for loop does. There are at least two flavors of this: proactive

interference and retroactive interference. Proactive interference occurs when previously learned information makes acquiring new knowledge harder. Think of this as if the “space” where that information wants to be stored is already occupied, so forming the new memory becomes harder. This can happen when you want to learn the definition of a word but have difficulty because that word already has a different association in your mind. Consider trying to learn the concept of negative reinforcement in psychology—here the word “negative” has the meaning “absent,” as opposed to “bad,” so negative reinforcement is when you encourage a behavior by removing something, say a painful stimulus. However, since the earlier meaning of negative as “bad” already exists, you may have difficulty remembering this and it becomes easy to incorrectly equate negative reinforcement with punishment. Retroactive interference is the opposite—where learning something new “erases” or suppresses an old memory. Anyone who has learned Spanish and later tried to learn French knows how tricky retroactive interference can be, as French words pop out when you want to speak Spanish again.

Forgotten Cues: A Locked Box with No Key

The third theory of forgetting says that many memories we have aren’t actually forgotten but simply inaccessible. The idea here is that in order to say that one has remembered something, it needs to be retrieved from memory. Since we aren’t constantly experiencing the entirety of our longterm memories simultaneously, this means there must be some process for dredging up the information, given an appropriate cue. What may happen in this case is that one of the links in the chain of retrieving the information has been severed (perhaps by decay or interference) and therefore the entire memory has become inaccessible. However, if that cue were restored, or if an alternative path to the information could be found, we would remember much more than is currently accessible to us.

This explanation also has some advantages. Intuitively it seems to be somewhat true, as we all know the tip-of-the-tongue experience, when we feel as though we should be able to remember a fact or word but we’re not able to summon it up immediately. It might also suggest that relearning things is much faster than learning them initially, because relearning is closer to repair work, while original learning is a completely new construction. Forgetting cues seems highly likely as a partial, if not complete, explanation of forgetting many things.

Cue forgetting as a complete explanation for our memory woes isn’t without its problems, however. Many memory researchers now believe that the act of remembering is not a passive process. In recalling facts, events, or knowledge, we’re engaging in a creative process of reconstruction. The memories themselves are often modified, enhanced, or manipulated in the process of remembering. It may be, then, that “lost” memories that are retrieved through new cues are actually fabrications. This seems especially likely in the case of “recovered” witness testimony from traumatic events, as experiments have shown that even highly vivid memories that feel completely authentic to the subject can be untrue.[9]

How Can You Prevent Forgetting?

Forgetting is the default, not the exception, so the ultralearners I encountered had devised various strategies for coping with this fact of life. These methods roughly divide into tackling two similar but different problems. The first set of methods deals with the problem of retention while undertaking the ultralearning project: How can you retain the things you learned the first

week, so that you don't need to relearn them by the last week? This is particularly important for memory-intensive ultralearning efforts such as Benny Lewis's language learning and Roger Craig's Jeopardy! trivia mastery. In these domains and many others, the volume of information to be learned is often so large that the forgetting becomes a practical obstacle almost immediately. The second set of methods, in contrast, has to do with the longevity of the skills and knowledge acquired after the project has been completed: Once a language has been learned to a level you're satisfied with, how can you keep yourself from forgetting it completely a couple years later? The ultralearners I encountered had devised differing methods for dealing with these two problems, which varied in effort and intensity. Some, like Craig, preferred elaborate electronic systems that can optimize memory with fancy algorithms, leaving little waste and inefficiency, if at the cost of introducing greater complexity. Others, like Richards, seem to prefer basic systems that succeed on their simplicity.

You need to pick a mnemonic system, which will both accomplish your goals and be simple enough to stick to. During intense periods of language learning, the sheer volume of vocabulary often meant that spaced-repetition systems were helpful for me. Other times, I preferred having conversations to maintain my speaking ability, even though this method is not quite as precise. With other subjects, I'm happier to allow for some degree of forgetting as long as I practice the skills I need to use continuously and have the ability to relearn.

My approaches may not reach a theoretical ideal, but they may end up working better because they have fewer possibilities for error and can be sustained more easily. Regardless of the exact system used, however, all systems seemed to work according to one of four mechanisms: spacing, proceduralization, overlearning, or mnemonics. Let's look at each of these mechanisms of retention first, in order to make sense of the quite different and idiosyncratic manifestations used in different ultralearning projects.

Memory Mechanism 1—Spacing: Repeat to Remember

One of the pieces of studying advice that is best supported by research is that if you care about long-term retention, don't cram. Spreading learning sessions over more intervals over longer periods of time tends to cause somewhat lower performance in the short run (because there is a chance for forgetting between intervals) but much better performance in the long run. This was something I needed to be careful about during the MIT Challenge. After my first few classes, I switched from doing one class at a time to doing a few in parallel, to minimize the impact that the crammed study time would have on my memory.

If you have ten hours to learn something, therefore, it makes more sense to spend ten days studying one hour each than to spend ten hours studying in one burst. Obviously, however, if the amount of time between study intervals gets longer and longer, the short-term effects start to outweigh the long-term ones. If you learn something with a decade separating study intervals, it's quite possible that you'll completely forget whatever you had learned before you reach the second session.

Finding the exact trade-off point between too long and too short has been a minor obsession for some ultralearners. Space your study sessions too closely, and you lose efficiency; space them too far apart, and you forget what you've already learned. This has led many ultralearners to apply what are known as spaced-repetition systems (SRS) as a tool for trying to retain the

most knowledge with the least effort. SRS was a major force behind Roger Craig's Jeopardy! trivia memorization, and I used the systems extensively when learning Chinese and Korean. Although you may not have heard of this term, the general principle is the backbone of many language-learning products, including Pimsleur, Memrise, and Duolingo. These programs tend to hide the spacing algorithm in the background, so you don't need to bother yourself with it. However, other programs, such as the open-source Anki, are the preferred tool of more extreme ultralearners who want to squeeze out a little more performance.

SRS is an amazing tool, but it tends to have quite focused applications. Learning facts, trivia, vocabulary words, or definitions is ideally suited for flash card software, which presents knowledge in terms of a question with a single answer. It's more difficult to apply to more complicated domains of knowledge, which rely on complex information associations that are built up only through real-world practice. Still, for some tasks, the bottleneck of memory is so tight that SRS is a powerful tool for widening it, even if there are some drawbacks. The authors of a popular study guide for medical students center their approach around SRS, because a medical student must remember so many things and the default strategy of forgetting and relearning is quite costly in terms of time.10

Spacing does not require complex software, however. As Richards's story clearly demonstrates, simply printing lists of words, reading them over, and then rehearsing them mentally without having them in front of you is an incredibly powerful technique. Similarly, semiregular practice of a skill is often quite helpful. After my year of learning languages, I wanted to ensure that I didn't forget them. My approach was fairly simple: schedule thirty minutes of conversation practice once a week, to be done over Skype using italki, an online service for tutoring and language exchange partners all over the world. I maintained this for one year, after which I dropped to once-permonth practice for another two years. I don't know whether this practice schedule was ideal, and I had other opportunities to practice that came up spontaneously in that time period that also helped, but I believe it was much better than doing nothing and letting the skills atrophy. When it comes to retention, don't let perfect become the enemy of good enough.

Another strategy for applying spacing, which can work better for more elaborate skills that are harder to integrate into your daily habits, is to semiregularly do refresher projects. I leaned toward this approach for the things I learned during the MIT Challenge, since the skill I wanted most to retain was writing code, which is tricky to do on only half an hour per week. This approach has the disadvantage of sometimes deviating quite a lot from optimal spacing; however, if you're prepared to do a little bit of relearning to compensate, it can still be a better approach than completely giving up practice. Scheduling this kind of maintenance in advance can also be helpful, as it will remind you that learning isn't something done once and then ignored but a process that continues for your entire life.

Memory Mechanism 2—Proceduralization: Automatic Will Endure

Why do people say it's "like riding a bicycle" and not "like remembering trigonometry?" This common expression may be rooted in deeper neurological realities than it first appears. There's evidence that procedural skills, such as riding a bicycle, are stored in a different way from declarative knowledge, such as knowing the Pythagorean Theorem or the Sine Rule for

triangles. This difference between knowing how and knowing that may also have different implications for long-term memory. Procedural skills, such as the ever-remembered bicycling, are much less susceptible to being forgotten than knowledge that requires explicit recall to retrieve.[11]

This finding can actually be used to our advantage. One dominant theory of learning suggests that most skills proceed through stages—starting declarative but ending up procedural as you practice more. A perfect example of this declarative-to-procedural transition is typewriting. When you start typing on a keyboard, you must memorize the positions of the letters. Each time you want to type a word, you have to think in terms of its letters, recall each one's position on the keyboard, and then move your finger to that spot to press it. This process may fail; you may forget where a key is and need to look down to type it. However, if you practice more and more, you stop having to look down. Eventually you stop having to think about the letters' positions or how to move your fingers to meet them. You may even reach a point where you don't think of letters at all and whole words come out at a time. Such procedural knowledge is quite robust and tends to be retained much longer than declarative knowledge. A quick observation is enough to verify this: when you've gotten really good at typing and someone asks you to quickly say where on a keyboard the letter w is, you might need to actually put your hands in the keyboard position (or imagine you're doing so) and pretend to type the w to say definitively. This is exactly what happened to me as I was typing out this paragraph. What has happened is that what was originally the primary access point to knowledge, your explicit memory of the key location, has faded away and now needs to be recalled with the more durable procedural knowledge encoded in your motor movements. If you've ever had to enter a password or pin code you use often, you may be in a similar position, where you remember it by feel and not by its explicit combination of numbers and letters.

Because of the fact that procedural knowledge is stored for longer, this may suggest a useful heuristic. Instead of learning a large volume of knowledge or skills evenly, you may emphasize a core set of information much more frequently, so that it becomes procedural and is stored far longer. This was an unintentional side effect of my friend's and my languagelearning project. Being forced to speak a language constantly meant that a core set of phrases and patterns was repeated so often that neither of us will ever forget them. This may not hold true for a bunch of less frequently used words or phrases, but the starting points of conversations are nearly impossible to forget. The classic approach to language studies, in which students "move on" from beginner words and grammatical patterns to more complicated ones may sidestep this, so that those core patterns aren't sticky enough to last for years without repeated practice.

Failing to fully proceduralize core skills was a major flaw of my first major self-education effort, the MIT Challenge, which I was able to improve upon in my subsequent language-learning and portrait-drawing projects. Whereas the MIT Challenge did have core mathematical and programming skills that were often repeated, what ended up being proceduralized was more haphazard rather than reflecting a conscious decision to automate the most essential skills of applying computer science.

Most skills we learn are incompletely proceduralized. We may be able to do some of them automatically, but other parts require us to actively search our minds. You might, for instance, be able to easily move variables from

one side of an equation to the other in algebra without thinking. But you may have to think a bit more when exponents or trigonometry is involved. Perhaps, owing to their nature, some skills cannot be completely automated and will always require some conscious thought. This creates an interesting mix of knowledge, with some things retained quite stably over longer periods of time and others susceptible to being forgotten. One strategy for applying this concept might be to ensure that a certain amount of knowledge is completely proceduralized before practice concludes. Another approach might be to spend extra effort to proceduralize some skills, which will serve as cues or access points for other knowledge. You may aim to completely proceduralize the process you use to start working on a new programming project, for example, so that you can get over that hump in the process of writing a new program. These strategies are somewhat speculative, but I think there are lots of potential ways the declarative-to-procedural transition of knowledge might be applied by clever ultralearners in the future.

Memory Mechanism 3—Overlearning: Practice Beyond Perfect

Overlearning is a well-studied psychological phenomenon that's fairly easy to understand: additional practice, beyond what is required to perform adequately, can increase the length of time that memories are stored.[12] The typical experimental setup is to give subjects a task, such as assembling a rifle or going through an emergency checklist, allowing them enough time to practice that they can do it correctly once. The time from zero to this point is considered the "learning" phase. Next, allow the subjects different amounts of "overlearning," or practice that continues after the first correct application. Since subjects are already doing the skill correctly, performance doesn't improve past this point. However, the overlearning can extend the durability of the skill.

In the typical setting in which overlearning has been studied, the duration of the overlearning effects tends to be quite short; practicing a little longer in one session produces an additional week or two of recall. This may imply that overlearning is primarily a short-term phenomenon: something useful for skills like first aid or emergency response protocols, which are rarely practiced but need to be kept fresh in between regular training sessions. I suspect, however, that overlearning might have longer-term implications if it is combined with spacing and proceduralization over much longer projects. In my own personal experience drawing portraits, for instance, the thought process used for mapping out the facial features I learned from Vitruvian Studio was repeated so many times that it's hard to forget, even though my major practice time was only during one month. Similarly, certain reflexes of programming or mathematics I can still easily recall from my MIT Challenge days, even without practice in the interim, because they happened to be patterns that were repeated far more than was necessary to perform them adequately at the time (because they were components of more elaborate problems).

Overlearning dovetails nicely with the principle of directness. Because direct use of a skill frequently involves overpracticing certain core abilities, that kernel is usually quite resistant to forgetting, even years later. In contrast, academically learned subjects tend to distribute practice more evenly to cover the entire curriculum to a minimum level of competency in each area, regardless of the centrality of subtopics to practical applications. Many people I've known who have learned a language that I also speak but who

learned it through years of formal schooling have much more impressive vocabularies or knowledge of grammatical nuances than I do. However, those same people may trip over fairly basic phrases, because they learned every fact and skill evenly, rather than overlearning the smaller subset of very common patterns.

There seem to be two main methods I've encountered for applying overlearning. The first is core practice, continually practicing and refining the core elements of a skill. This approach often works well paired with some kind of immersion or working on extensive (as opposed to intensive) projects, after the initial ultralearning phase has been completed. The shift from learning to doing here may actually involve a deeper, subtler form of learning, which shouldn't be discounted as simply applying previously learned knowledge.

The second strategy is advanced practice, going one level above a certain set of skills so that core parts of the lower-level skills are overlearned as one applies them in a more difficult domain. One study of algebra students demonstrated this second strategy.13 Most students who had taken an algebra class and were retested years later had forgotten huge amounts of what they had learned. This could have been either because the information was truly lost or simply because forgotten cues rendered the majority of it inaccessible. Interestingly, this rate of forgetting was the same for better- and poorerperforming students; better students retained more than weaker ones, but the rate at which they had forgotten was the same. One group, however, did not show such a steep decline in forgetting: those who had taken calculus. This suggests that moving up a level to a more advanced skill enabled the earlier skill to be overlearned, thus preventing some forgetting.

Memory Mechanism 4—Mnemonics: A Picture Retains a Thousand Words

The final tool common to many ultralearners I encountered was mnemonics. There are many mnemonic strategies, and covering them all is outside the scope of this book. What they have in common is that they tend to be hyperspecific—that is, they are designed to remember very specific patterns of information. Second, they usually involve translating abstract or arbitrary information into vivid pictures or spatial maps. When mnemonics work, the results can be almost difficult to believe. Rajveer Meena, the Guinness World Record holder for memorizing digits of the mathematical constant pi, knows the number to 70,000 decimal places.14 Master mnemonicists, who compete in championships of memory, can memorize the order of a deck of cards in under sixty seconds and can repeat a poem verbatim after only a minute or two of studying. These feats are quite impressive, and even better, they can be learned by anyone patient enough to apply them. How do they work?

One common, and useful, mnemonic is known as the keyword method. The method works by first taking a foreign-language word and converting it into something it sounds like in your native language. If I were doing this with French, for example, I might take the word chavirer (to capsize) and convert it into "shave an ear," to which it is close enough in sound for the latter to serve as an effective cue for recalling the original word. Next I create a mental image that combines the sounds-like version of the foreign word and an image of its translation in a fantastical and vivid setting that is bizarre and hard to forget. In this case, I could imagine a giant ear shaving a long beard while sitting in a boat that capsizes. Then, whenever I need to remember what "capsize" is in French, I think of capsizing, recall my elaborate picture, which

links to “shaving an ear” and thus . . . chavirer. This process sounds needlessly complicated and elaborate at first, but it benefits from converting a difficult association (between arbitrary sounds and a new meaning) into a few links that are much easier to associate and remember. With practice, each conversion of this type may take only fifteen to twenty seconds, and it really does help with remembering foreign-language words. This particular kind of mnemonic works for this purpose, but there are others that work for remembering lists, numbers, maps, or sequences of steps in a procedure. For a good introduction to this topic, I highly recommend Joshua Foer’s book Moonwalking with Einstein: The Art and Science of Remembering Everything.

Mnemonics work well, and with practice, anyone can do them. Why, then, are they not front and center in this chapter, instead of at the end? I believe that mnemonics, like SRS, are incredibly powerful tools. And as tools, they can open new possibilities for people who are not familiar with them. However, as someone who has spent much time exploring them and applying them to real-world learning, their applications are quite a bit narrower than they first appear, and in many real-world settings they simply aren’t worth the hassle.

I believe there are two disadvantages to mnemonics. The first is that the most impressive mnemonics systems (like the one for memorizing thousands of digits of the mathematical constant pi), also require a considerable up-front investment. After you’re done, you can memorize digits easily, but this isn’t actually a very useful task. Most of our society adapts around the fact that people generally cannot memorize digits, so we have paper and computers do it for us. The second disadvantage is that recalling from mnemonics is often not as automatic as directly remembering something. Knowing a mnemonic for a foreign-language word is better than failing to remember it entirely, but it’s still too slow to allow you to fluently form sentences out of mnemonically remembered words. Thus mnemonics can act as a bridge for difficult-toremember information, but it’s usually not the final step in creating memories that will endure forever.

Mnemonics, therefore, are an incredibly powerful if somewhat brittle tool. If you are doing a task that requires memorizing highly dense information in a very specific format, especially if the information is going to be used over a few weeks or months, they can enable you to do things with your mind that you might not have thought possible. Alternatively, they can be used as an intermediate strategy to smooth initial information acquisition when the information is quite dense. I’ve found them useful for language learning and terminology, and, paired with SRS, they can form an effective bridge from feeling as though there’s no way you can possibly remember everything to remembering it so deeply that you can’t possibly forget. Indeed, in a world before paper, computers, and other externalized memories, mnemonics were the main game in town. However, in the modern world, which has developed excellent coping mechanisms for the fact that most people cannot remember things as a computer can, I feel that mnemonics tend to serve more as cool tricks than as a foundation you should base your learning efforts on. Still, there is a devoted subset of ultralearners who are fiercely committed to applying these techniques, so my word shouldn’t be the final verdict.

Winning the War Against Forgetting

To retain knowledge is ultimately to combat the inevitable human tendency to forget. This process occurs in all of us, and there’s no way to avoid it

completely. However, certain strategies—spacing, proceduralization, overlearning, and mnemonics—can counteract your short- and long-term rates of forgetting and end up making a huge difference in your memorization.

I opened this chapter by discussing Nigel Richards's mysterious Scrabble mastery. How he is able to recall so many words so quickly and see them in a set of scrambled tiles will likely remain an enigma. What we do know about him fits the picture of other ultralearners who have dominated memoryintensive subjects: active recall, spaced rehearsal, and an obsessive commitment to intense practice. Whether you or I have the will to go as far as Richards does is an open question, but with hard work and a good strategy, it seems likely to me that the battle against forgetting need not be a losing one. Though Richards's Scrabble practice may give him the benefit of memorizing words he doesn't know the meaning of, real life tends to reward a different kind of memory: one that integrates knowledge into a deep understanding of things. In the next principle, we'll look at going from memory to intuition.

Chapter 11: Principle 8: Intuition: Dig Deep Before Building Up

To the world, he was an eccentric professor and Nobel Prize–winning physicist; to his biographer, he was a genius; but to those who knew him, Richard Feynman was a magician. His colleague the mathematician Mark Kac once posited that the world holds two types of geniuses. The first are ordinary geniuses: “Once we understand what they have done we feel certain that we, too, could have done it.” The other type are magicians, whose minds work in such inscrutable ways that “Even after we understand what they have done, the process by which they have done it is completely dark.” Feynman, by his reckoning, was “a magician of the highest caliber.”[1]

Feynman could take problems others had worked on for months and immediately see the solution. In high school, he competed in mathematics tournaments, where he would often get the correct answer while the problem was still being stated. While his competitors had just begun to compute, Feynman already had the answer circled on the page. In his college days, he competed in the Putnam Mathematics Competition, with the winner receiving a paid scholarship to Harvard. This competition is notoriously difficult, requiring clever tricks rather than straightforward application of previously learned principles. Time is also a factor, and some examination sessions have a median score of zero, meaning the typical competitor didn’t get even one right. Feynman walked out of the exam early. He scored first place, with his fraternity brothers later being amazed at the drastic gap between Feynman’s score and the next four on the list. During his work on the Manhattan Project, Niels Bohr, then one of the most famous and important living physicists, asked to speak with Feynman directly, to run his ideas by the young grad student before talking with the other physicists. “He’s the only guy who’s not afraid of me” was Bohr’s explanation. “[He] will say when I’ve got a crazy idea.”[2]

Nor was Feynman’s magic restricted to physics. As a child he went around fixing people’s radios, in part because paying an adult for repairs in the Depression was too costly but also because the radio owners marveled at his process. Once, while he was lost in thought trying to figure out why a radio was producing an awful noise as it started up, the owner of the radio got impatient. “What are you doing? You come to fix the radio, but you’re only walking back and forth!” “I’m thinking!” came the reply, at which the owner, startled at the boldness for which Feynman would later become famous, laughed. “He fixes radios by thinking!”

As a young man during the construction of the atomic bomb in the Manhattan Project, he occupied his free time picking the locks of his supervisors’ desks and cabinets. He once broke into a senior colleague’s filing cabinet, where the secrets for building a nuclear bomb were kept, as a practical joke. Another time, he demonstrated his technique to a military official, who, instead of fixing the security flaw, decided the proper course was to warn everyone to keep Feynman away from their safes! Later, upon meeting a locksmith, he found that his reputation had grown to the point where the professional said, “God! You’re Feynman—the great safecracker!”

He also created the impression of being a human calculator. On a trip to Brazil, he went toe to toe against an abacus salesman, computing difficult figures such as the cube root of 1,729.03. Not only did Feynman get the right answer, 12.002, but he got it to more decimal places than the abacus salesman, who was still furiously calculating to get to 12 when Feynman

displayed his five-digit result. This ability impressed even other professional mathematicians, to whom he argued that he could, within one minute, get the answer to any problem that could be stated in ten seconds to within 10 percent of the correct number. The mathematicians threw questions at him such as “e to the power of 3.3” or “e to the power of 1.4,” and Feynman managed to spit back the correct answer almost immediately.

Demystifying Feynman’s Magic

Feynman was certainly a genius. Many people, including his biographer James Gleick, are satisfied to leave it at that. A magic trick, after all, is most dazzling when you don’t know how it is done. Perhaps this is why many accounts of the man have focused on his magic instead of his method.

Though Feynman was quite smart, his magic had its gaps. He excelled in math and physics but was abysmal in the humanities. His college grades in history were in the bottom fifth of his class, in literature in the bottom sixth, and his fine arts grades were worse than those of 93 percent of his fellow students. At one point, he even resorted to cheating on a test to pass. His intelligence, measured while he was in school, scored 125. The average college graduate has a score of 115, which puts Feynman only modestly higher. Perhaps, as has been argued afterward, Feynman’s genius failed to be captured in his IQ score, or it simply was a poorly administered test. However, for someone so celebrated for a mind beyond comprehension, these facts remind us that Feynman was mortal.

What about Feynman’s mental calculus? In this case, we have Feynman’s words himself for how he could compute so much faster than the abacus salesman or his mathematician colleagues. The cube root of 1,729.03? Feynman explained, “I happened to know that a cubic foot contains 1728 cubic inches, so the answer is a tiny bit more than 12. The excess, 1.03, is only one part in nearly 2000, and I had learned in calculus that for small fractions, the cube root’s excess is one-third of the number’s excess. So all I had to do was find the fraction 1/1728, and multiply by 4.” The constant e to the power of 1.4? Feynman revealed, “because of radioactivity (mean-life and half-life), I knew the log of 2 to the base e, which is .69315 (so I also knew that e to the power of .7 is nearly equal to 2).” To go to the power of 1.4, he’d just have to multiply that number against itself. “[S]heer luck,” he explained.3 The secret was his impressive memory for certain arithmetic results and an intuition with numbers that enabled him to interpolate. However, the lucky picks of his examiners allowed him to leave an impression of a magical ability to calculate.

How about the famous lock picking? Once again, it was magic, in the same sense as a magician performing well-practiced tricks. He obsessed over figuring out how combination locks worked. One day he realized that by fiddling with a lock when it was open, he could figure out the last two numbers on the safe. He would write them down on a note after he left the person’s office and then could sneak back in, crack the remaining number with some patience, and leave ominous notes behind.

Even his magical intuition for physics had its explanation: “I had a scheme, which I still use today when somebody is explaining something that I’m trying to understand: I keep making up examples.” Instead of trying to follow an equation, he would try to imagine the situation it described. As more information was given, he’d work it through on his example. Then whenever his interlocutor made a mistake, he could see it. “As they’re telling me the conditions of the theorem, I construct something which fits all the conditions.

You know, you have a set (one ball)—disjoint (two balls). Then the balls turn colors, grow hairs, or whatever, in my head as they put more conditions on. Finally they state the theorem, which is some dumb thing about the ball which isn't true for my hairy green ball thing, so I say, 'False!'"[4]

Magic, perhaps, Feynman did not possess, but an incredible intuition for numbers and physics he certainly did. This might downplay the idea that his mind worked in a fundamentally different way from yours or mine, but it doesn't negate the impressiveness of his feats. After all, even knowing the logic behind Feynman's sleight of hand, I'm certain I wouldn't have been able to calculate the numbers he did so effortlessly or follow some complex theory in my mind's eye. This explanation doesn't provide the satisfying "Aha!" that it would have had the magician's trick been revealed as something trivial. Therefore, we need to dig deeper to an understanding of how someone such as Feynman could develop this incredible intuition in the first place.

Inside the Mind of the Magician

Psychological researchers have investigated the problem of how intuitive experts, such as Feynman, think differently about problems than novices do. In a famous study, advanced PhDs and undergraduate physics students were given sets of physics problems and asked to sort them into categories.[5] Immediately, a stark difference became apparent. Whereas beginners tended to look at superficial features of the problem—such as whether the problem was about pulleys or inclined planes—experts focused on the deeper principles at work. "Ah, so it's a conservation of energy problem," you can almost hear them saying as they categorized the problem by what principles of physics they represented. This approach is more successful in solving problems because it gets to the core of how the problems work. The surface features of a problem don't always relate to the correct procedure needed to solve it. The students needed much more trial and error to home in on the correct method, whereas the experts could immediately start with the right approach.

If the principles-first way of thinking of problems is so much more effective, why don't students start there instead of attending to superficial characteristics? The simple answer may be that they can't. Only by developing enough experience with problem solving can you build up a deep mental model of how other problems work. Intuition sounds magical, but the reality may be more banal—the product of a large volume of organized experience dealing with the problem.

Another study, this time comparing chess masters and beginners, offered an explanation of why this might be so.[6] The memory for chess positions of experts and novices was tested by showing them a particular chess setup and then asking them to re-create it on an empty board. The masters could recall far more than the beginners. The new players needed to put down pieces one by one and were often unable to fully remember all the details of the position. The masters, in contrast, remembered the board in larger "chunks" with several pieces corresponding to a recognizable pattern put down at the same time. Psychologists theorize that the difference between grand masters and novices is not that grand masters can compute many more moves ahead but that they have built up huge libraries of mental representations that come from playing actual games. Researchers have estimated that having around 50,000 of these mental "chunks" stored in long-term memory is necessary to reach expert status.[7] These representations allow them to take a complex

chess setup and reduce it to a few key patterns that can be worked with intuitively. Beginners, who lack this ability, have to resort to representing each piece as a single unit and are therefore much slower.*

This facility of chess grand masters, however, is limited to the patterns that come from real chess games. Give beginners and experts a randomized chess board (one that doesn't arise from normal play), and the experts no longer display the same marked advantage. Without the library of memorized patterns at their disposal, they have to resort to the beginner's method of remembering the board piece by piece.

This research gives us a glimpse into how the mind of a great intuitionist such as Feynman operated. He, too, focused on principles first, building off examples that cut straight to the heart of what the problem represented rather than focusing on superficial features. His ability to do this was also built off an impressive library of stored physics and math patterns. His mental calculation feats seem impressive to us but were trivial to him, because he happened to know so many mathematical patterns. Like chess grand masters, when given real physics problems he excelled because he had built a huge library of patterns from real experiences with physics. However, his intuition, too, would fail him when the subject of his study wasn't built on those assumptions. Feynman's mathematician friends would test him on counterintuitive theorems from mathematics. His intuition there would fail when properties of the procedure (such as that an object can be cut into infinitely small pieces) defied the normal physical limitations that aided his intuition elsewhere.

Feynman's magic was his incredible intuition, coming from years of playing with the patterns of math and physics. Could emulating his approach to learning enable someone else to capture some of that magic? Let's look at some of Feynman's hallmark approaches to learning and solving problems and try to reveal some of the magician's secrets.

How to Build Your Intuition

Simply spending a lot of time studying something isn't enough to create a deep intuition. Feynman's own experience demonstrates this. On numerous occasions, he would encounter students who memorized solutions to a particular problem but failed to see how they applied outside the textbook domain. In one story, he tricked some of his classmates into believing that a French curve (a device for drawing curved lines) was special because, no matter how you hold it, the bottom is tangent to a horizontal line. This, however, is true of any smooth shape, and it is an elementary fact of calculus that his fellow classmates should have realized. Feynman saw this as an example of a particularly "brittle" way of learning things, since students didn't really think about relating what they had learned to problems outside the textbook.

How, then, can someone avoid a similar fate—spending a lot of time learning something without really developing the flexible intuition for it that made Feynman famous? There's no precise recipe for doing so, and a healthy dose of experience and smarts certainly helps. However, Feynman's own account of his learning process offers some useful guidelines for how he did things differently.

Rule 1: Don't Give Up on Hard Problems Easily

Feynman was obsessed with solving problems. Starting in his childhood days of tinkering with radios, he would work stubbornly on a problem until it yielded. Sometimes, when the owner of the radio would get impatient, he

recalled, “If [he] had said, ‘Never mind, it’s too much work,’ I’d have blown my top, because I want to beat this damn thing, as long as I’ve gone this far.”8 This tendency carried over into mathematics and physics. He’d often eschew easier methods, such as the Lagrangian technique, forcing himself to painstakingly calculate all the forces by hand, simply because with the latter method he came to understand it better. Feynman was a master at pushing farther on problems than others expected of him, and this itself might have been the source of many of his unorthodox ideas.

One way you can introduce this into your own efforts is to give yourself a “struggle timer” as you work on problems. When you feel like giving up and that you can’t possibly figure out the solution to a difficult problem, try setting a timer for another ten minutes to push yourself a bit further. The first advantage of this struggle period is that very often you can solve the problem you are faced with if you simply apply enough thinking to it. The second advantage is that even if you fail, you’ll be much more likely to remember the way to arrive at the solution when you encounter it. As mentioned on the chapter on retrieval, difficulty in retrieving the correct information—even when the difficulty is caused by the information not being there—can prime you to remember information better later.

Rule 2: Prove Things to Understand Them

Feynman told a story of his first encounter with the work by the physicists T. D. Lee and C. N. Yang.9 “I can’t understand these things that Lee and Yang are saying. It’s all so complicated,” he declared. His sister, lightly teasing him, remarked that the problem wasn’t that he couldn’t understand it but that he hadn’t invented it. Afterward, Feynman decided to read through the papers meticulously, finding that they weren’t actually so difficult but that he had simply been afraid to go through them.

Though this story illustrates one of Feynman’s quirks, it is also revealing because it illustrates a major point in his method. Feynman didn’t master things by following along with other people’s results. Instead, it was by the process of mentally trying to re-create those results that he became so good at physics. This could be a disadvantage at times, since it caused him to repeat work and reinvent processes that already existed in other forms. However, his drive to understand things by virtue of working through the results himself also assisted in building his capacity for deep intuition.

Feynman was not alone in this approach. Albert Einstein, as a child, built his intuitive powers by trying to prove propositions in math and physics. One of Einstein’s earliest mathematical forays was trying to prove the Pythagorean Theorem on the basis of similar triangles.10 What this approach indicates is that both men had a tendency to dig much deeper before they considered something to be “understood.” Feynman’s scoffing at not understanding Lee and Yang wasn’t because there was no understanding; indeed, he was familiar with much of the background work on the problem. Instead, it was probably because his notion of understanding was much deeper and more based on demonstrating results himself, rather than merely nodding along while reading.

The challenge of thinking you understand something you don’t is unfortunately a common one. Researcher Rebecca Lawson calls this the “illusion of explanatory depth.”11 At issue here is the notion that we judge our own learning competency, not directly but through various signals. Assessing whether or not we know a factual matter, such as what is the capital of France, is quite easy—either the word “Paris” comes up in your mind, or it

doesn't. Asking whether you understand a concept is a lot harder because you may understand it a little, but not enough for the purposes at hand.

Here's a perfect thought experiment to help you understand the problem. Get out a piece of paper, and try, briefly, to sketch how a bicycle looks. It doesn't need to be a work of art; just try to place the seat, handles, tires, pedals, and bike chain in the right place. Can you do it?

Don't cheat by just trying to visualize the bicycle. Actually see if you can draw it. If you don't have a pencil or paper handy, you can simulate it by saying which things connect to what. Have you tried it?

Interestingly, Rebecca Lawson's study asked participants to do exactly this. As the illustrations clearly show, most participants had no idea how the machines were assembled, even though they used them all the time and believed they understood them quite well. The illusion of understanding is very often the barrier to deeper knowledge, because unless that competency is actually tested, it's easy to mislead yourself into thinking you understand more than you do. Feynman's and Einstein's approach to understanding propositions by demonstrating them prevents this problem in a way that's hard to do otherwise.12

Were you one of the lucky ones who managed to put the chains on correctly? Try the exercise again, except this time with a can opener. Can you explain how it works? How many gears are there? How does it cut the lid open? This one is much harder, yet most of us would say we understand can openers!

Rule 3: Always Start with a Concrete Example

Human beings don't learn things very well in the abstract. As the research on transfer demonstrates, most people learn abstract, general rules only after being exposed to many concrete examples. It's not possible to simply present a general principle and expect that you can apply it to concrete situations. As if presaging this observation, Feynman himself would supply concrete examples even when they were not given. Working through an explicit example in his mind's eye, he could follow along and see what the math was trying to demonstrate.

This process of following along with one's own example forces a deeper level of processing the material as it is being presented. A finding from the literature on memory, known as the levels-of-processing effect, suggests that it isn't simply how much time you spend paying attention to information that determines what you retain but, crucially, how you think about that information while you pay attention to it. In one study of this effect, participants were asked to review a list of words; half of them were told it would be for a test (and thus they were motivated to learn it), while the others were simply told to review the list.13 Within each group, participants were again split by what orienting technique they used to review the list. Half were asked to notice whether or not the words contained the letter e, a relatively shallow level of processing, while the others were asked if the word was pleasant or not, a deeper processing of the meaning of the word, not merely its spelling. The result was that motivation played no difference; telling students to study for a test didn't impact how much they retained. However, the orienting technique did make a large difference. Those who processed the words deeply remembered almost twice as much as those who simply scanned their spelling.14

Feynman's habit of developing a concrete instance of a problem can be seen as an example of this deeper form of processing, which not only

enhances later retention but also fosters an intuitive understanding. This technique also enables some feedback, because when it's not possible to imagine an appropriate example, that's evidence that you don't understand something well enough and would benefit from going back a few steps and learning the material better before continuing. Using feedback-rich processes to test whether or not he knew something was a hallmark of Feynman's learning style.

Rule 4: Don't Fool Yourself

"Don't fool yourself" was one of Feynman's most popular aphorisms, to which he added, "and you're the easiest person to fool." He was deeply skeptical of his own understanding. He presaged the current replication crisis in psychology, attacking what he perceived as many social scientists fooling themselves into believing they had discovered something they had not. I suspect that part of this insight arose from the fact that he had cultivated such rigorous standards for what he counted as knowing.

The Dunning-Kruger effect occurs when someone with inadequate understanding of a subject nonetheless believes he or she possesses more knowledge about the subject than the people who actually do.15 This can occur because when you lack knowledge about a subject, you also tend to lack the ability to assess your own abilities. It is true that the more you learn about a subject, the more questions arise. The reverse also seems to be true, in that the fewer questions you ask, the more likely you are to know less about the subject.

One way to avoid this problem of fooling yourself is simply to ask lots of questions. Feynman took this approach himself: "Some people think in the beginning that I'm kind of slow and I don't understand the problem, because I ask a lot of these 'dumb' questions: 'Is a cathode plus or minus? Is an anion this way, or that way?'"*16 How many of us lack the confidence to ask "dumb" questions? Feynman knew he was smart and had no problem asking them. The irony is that by asking questions with seemingly obvious answers, he also noticed the not-so-obvious implications of the things he studied.

The opposite tendency, to avoid asking questions in the vain attempt to appear knowledgeable, has considerable costs. While lecturing in Brazil, Feynman's students would often complain when he asked simple questions that they knew the answers to already, instead of just lecturing. Why waste valuable classroom time on such exercises? The answer, Feynman eventually realized, was that they didn't know the answers but didn't want to admit it in front of everyone else in the class, wrongly assuming that they were the only ones who didn't know it. Explaining things clearly and asking "dumb" questions can keep you from fooling yourself into thinking you know something you don't.

The Feynman Technique

When I first read about Feynman, I was inspired to try to formulate many of these different observations into a concrete method I could apply to my own studies. What resulted was something I named the Feynman Technique and applied extensively during my MIT Challenge. The purpose of using this technique is to help develop intuition about the ideas you are learning. It can be used when you don't understand an idea at all or simply when you understand something a little but really want to turn it into a deep intuition. The method is quite simple:

1. Write down the concept or problem you want to understand at the top of a piece of paper.

2. In the space below, explain the idea as if you had to teach it to someone else.
1. If it's a concept, ask yourself how you would convey the idea to someone who has never heard of it before.
2. If it's a problem, explain how to solve it and—crucially—why that solution procedure makes sense to you.
3. When you get stuck, meaning your understanding fails to provide a clear answer, go back to your book, notes, teacher, or reference material to find the answer.

The crux of this method is that it tries to dispel the illusion of explanatory depth. Since many of our understandings are never articulated, it's easy to think you understand something you don't. The Feynman Technique bypasses this problem by forcing you to articulate the idea you want to understand in detail. Just as drawing a bicycle quickly confirms whether you have a basic grasp of how it is put together, using this technique will quickly reveal how much you really understand of your subject. Now any gaps in your understanding will become obvious as you struggle to explain key parts of the idea.

The technique itself has some nuances and can be applied in a few different ways that might be helpful, depending on your specific intuitive deficit.

Application 1: For Things You Don't Understand at All

The first way to use this approach is when you don't understand something at all. In this case, the easiest way is to do it with the book in hand and go back and forth between your explanation and the one in the book. This lacks the benefits of retrieval practice, but it can often be essential when the explanation you've been given baffles you. Feynman himself did something similar when presented with what he saw to be philosophical gobbledygook:

I had this uneasy feeling of "I'm not adequate," until finally I said to myself, "I'm going to stop,
and read one sentence slowly, so I can figure out what the hell it means."
So I stopped—at random—and read the next sentence very carefully. I can't remember it precisely, but it was very close to this: "The individual member of the social community often
receives his information via visual, symbolic channels." I went back and forth over it, and translated. You know what it means? "People read."[17]

Although Feynman's method was aimed more at illustrating the deliberately confusing nature of the prose rather than trying to understand a nuanced meaning, the same method can help whenever you're learning anything that goes over your head.

I used this technique when taking a class on machine vision during the MIT Challenge. I didn't understand photogrammetry, a technique of determining the 3D shape of an object based on a series of 2D pictures taken under different lighting conditions. It involved some tricky concepts, so I wasn't quite sure how it worked. With my textbook at my side, I wrote a few pages of notes, trying to sketch out the broad strokes of the idea so I could get the general gist of it.[18]

Application 2: For Problems You Can't Seem to Solve

A second way to apply this is for solving a difficult problem or mastering a technique. In this instance, it's very important to go through the problem step by step alongside the explanation you generate, rather than simply summarizing it. Summarizing may end up skipping over the core difficulties

of the problem. Going deeper may take time, but it can help you get a strong grasp over a new method in one go, rather than needing numerous repetitions to memorize the steps.

I applied this to a class in computer graphics for a technique I was struggling with called grid acceleration. This is a method of speeding up the performance of ray-traced rendering systems by avoiding analyzing objects that “obviously” won’t be on the part of the screen you’re drawing. To get a better handle on this, I walked through the problem with the technique, drawing a little snowman that I imagined rendering, with lines shooting out of an eyeball representing the camera.19

Application 3: For Expanding Your Intuition

A final way to apply this method is to ideas that are so important that it would really help if you had a great intuition about them. In this application of the method, instead of focusing on explaining every detail or going along with the source material, you should try to focus on generating illustrative examples, analogies, or visualizations that would make the idea comprehensible to someone who has learned far less than you have. Imagine that instead of trying to teach the idea, you are being paid to write a magazine article explaining the idea. What visual intuitions would you use to pin down the abstractions? Which examples would flesh out a general principle? How could you make something confusing feel obvious?

I applied this to understanding the concept of voltage in an early class on electromagnetism during the MIT Challenge. Though I was comfortable using the concept in problems, I didn’t feel that I had a good intuition of what it was. It’s obviously not energy, electrons, or flows of things. Still, it was hard to get a mental image of an abstract concept on a wire. Going through this technique and comparing the equations to the ones for gravity, it’s clear that voltage is to the electrical force as height is to the gravitational force. Now I could form a visual image. The wires were like troughs of water at different heights. Batteries were like pumps, moving the water up. Resistors were like hoses dropping down, of various widths to impede the flow of water draining down. Although this picture of troughs and hoses wasn’t necessary for solving the equations, it stuck with me and helped me reason my way out of new situations more easily than if voltage had just been an abstract quantity.

Demystifying Intuition

When many people look at a genius like Richard Feynman, they’re inclined to focus on his seemingly effortless intuitive leaps. In his playful style and rebellious impulses, he may seem to defy the stereotype that learning requires hard work. However, as we go beneath the surface, it becomes clear that he shared much in common with the other ultralearners I’ve studied. He worked hard on understanding things, and he put incredible amounts of his spare time into mastering the methods that made his intuition work. In his early days in college, he and a friend went back and forth over the early books on quantum mechanics, racing ahead of their classmates to understand it. He even made a meticulous timetable to allocate hours to his many intellectual pursuits. Even in his trivial obsessions, he displayed a streak for aggressive methods; while learning lock picking, for example, he trained himself to go through all the possible combinations, practicing them repeatedly: “I got it down to an absolute rhythm so I could try the 400 possible back numbers in less than half an hour. That meant I could open a safe in a maximum of eight hours—with an average time of four hours.”20

When people hear about geniuses, especially the iconoclastic ones such as Feynman, there's a tendency to focus on their gifts and not their efforts. I have no doubt that Feynman possessed gifts. But perhaps his greatest one was his ability to merge tenacious practice and play. He approached picking locks with the same enthusiasm for solving puzzles that he did for unraveling the secrets of quantum electrodynamics. It's this spirit of playful exploration that I want to turn to in the final principle of ultralearning: experimentation.

Chapter 12: Principle 9: Experimentation: Explore Outside Your Comfort Zone

If you were to read his story without seeing his art, Vincent van Gogh would be the last person you would expect to become one of the most famous painters of all time. He started at a late age, twenty-six. Art is a field of precocity, and famous masters typically display their gifts early. Pablo Picasso's cubist style, for example, came out of his already being able to paint realistically as a child, allowing him to boldly declare that it had taken him "four years to paint as Rafael, but a lifetime to paint like a child." Leonardo da Vinci was apprenticed as a painter in his teens. One story has him, as a youth, painting a monster on a peasant's shield only to have it resold to the duke of Milan. Salvador Dal had his first exhibit before his fourteenth birthday, already showcasing the talent that would make him famous. Van Gogh, in contrast, was delayed and did not possess any obvious signs of ability. It was only after failing as an art dealer and minister that he picked up the brush. An art seller and family friend, H. G. Tersteeg, believed his artistic aspirations were put on to mask his laziness. "You started too late," he declared. "Of one thing I am sure, you are no artist. . . . This painting of yours will be like all the other things you started, it will come to nothing."[1]

Worse than the fact that he started late, however, was that van Gogh simply wasn't very good at drawing. His drafting was crude and childlike. When he finally convinced models to sit for portraits—no small task in light of the Dutchman's famously difficult personality—it took him many attempts to get anything resembling a likeness. While in a brief stint at a Parisian atelier, he even studied next to future leaders of the Post-Impressionist movement, such as Henri de Toulouse-Lautrec. However, unlike the effortless quality with which Toulouse-Lautrec captured the likeness of a scene with a few flicks of his wrist, van Gogh struggled. "We considered his work too unskillful," one classmate recalled. "His drawings had nothing remarkable about them."[2] In the end, his inability to fit in with his classmates, lack of talent, and off-putting manners had him leaving the studio after less than three months.

His late start and lack of obvious talent were compounded by his temperament. Nearly everyone who entered his life would eventually reject him, as his manic enthusiasm and fraternal solidarity would inevitably sour into bitter fights with nearly every person he met. Near the end of his life, he was routinely placed in mental asylums, varyingly diagnosed with disorders from "acute mania with generalized delirium" to "a kind of epilepsy." His outbursts, or "attacks," as he referred to them, alienated him from people who could potentially serve as his peers, mentors, and teachers. As a result, despite having attempted formal schooling, van Gogh was largely self-taught, capturing only brief moments of more traditional education in the moments during which he could hold on to friendships before pushing people away.

It was van Gogh's mysterious and untimely death that cut short the artistic career that was so late to begin. At thirty-seven, he died of a bullet wound to the stomach. Although his death was suspected to be a suicide, his biographers Steven Naifeh and Gregory White Smith consider accident or foul play more likely; he may possibly even have been shot by one of the village youths who played pranks on him and called him the fou roux, or

“crazed redhead.”
In spite of all this, van Gogh has become one of the most famous painters of all time. The Starry Night, Irises, and Vase with Fifteen Sunflowers have become icons. On four separate occasions, a van Gogh piece has become the most expensive painting ever sold, including his Portrait of Dr. Gachet, which was sold for more than $82 million.3 Van Gogh’s signature swirls of color, thick impasto application, and strong outlines have made many people consider his paintings some of the greatest of all time.
How can we explain these discrepancies? How does someone who starts late, with no obvious talent and many handicaps, nonetheless become one of the world’s greatest artists, with one of the most recognizable and distinctive styles? To understand van Gogh, I want to turn to the ninth and final principle of ultralearning: experimentation.
How van Gogh Learned to Paint
Put yourself in van Gogh’s shoes for a moment. You’ve failed miserably as an art dealer, despite your family connections. You’ve failed as a preacher. Now you’re embarking on a new profession—painting—even though you have difficulties in drawing things accurately. What would you do? Van Gogh’s response to this challenge was a pattern that would repeat throughout his life. First, he would identify a learning resource, method, or style and pursue it with incredible vigor, creating dozens, if not hundreds, of works in that direction. After this burst of intensity, aware of his still-existing deficiencies, he would apply himself to a new resource, method, or style and start again. Although there’s no evidence van Gogh thought of the connection, I see a parallel between this pattern and the one used by successful scientists: hypothesis, experiment, results, repeat. Perhaps inadvertently, van Gogh’s aggressive, experimental strides into painting allowed him to mature into not merely a proficient painter but an unforgettably unique one.
Van Gogh’s experimentation began when he was first trying to become an artist. The normal route to an artistic career in those days was to attend an art school or apprentice in a studio. Van Gogh, due to the fact that others did not see him as possessing much talent and his odd temperament, did not have much luck with those traditional avenues. Therefore he turned to selfeducation, pursuing home-study courses that promised to teach him the basics of drawing. In particular, he made heavy use of Charles Bargue’s Exercices au fusain (Charcoal Exercises) and Cours de dessin (Drawing Course), as well as Armand Cassagne’s Guide de l’alphabet du dessin (Guide to the ABCs of Drawing). They were thick books with graduated exercises on which aspiring artists could work step by step to improve their drawing skill. According to his biographers, van Gogh “devoured these big books . . . page by page, over and over.” Van Gogh himself reported to his brother, Theo, “I have now finished all sixty sheets,” adding “I worked almost a whole fortnight, from early morning until night.”4 Copying was another strategy van Gogh employed early on that he would continue late into his artistic career. Jean-Fran ois Millet’s The Sower was one of his favorite pictures to copy, which he did again and again. He also applied himself to sketching from life early, in particular models for portraits, which he struggled with due to his difficulties with drafting accurately.
Van Gogh studied from other artists, friends, and mentors. Anthon van Rappard convinced him to try out reed pen and ink and adopt the mature artist’s style of short and fast strokes. Another artist, Anton Mauve,

persuaded him to try a variety of different media: charcoal and chalk, watercolor, and Cont crayon. Often those attempts were not successful. During their stay together at the house where van Gogh would later cut off his ear, Paul Gauguin pushed the Dutchman to paint from memory, mute his colors, and adopt new materials for different effects. Those tactics didn't work for van Gogh, whose weaknesses in drafting were exacerbated by not having the scene directly in front of him, and the different materials went against the style that would later make him famous. Experiments, however, needn't always be successful to have value, and van Gogh had many opportunities for trying new techniques.

Van Gogh experimented not just with materials and methods but also with the philosophies that underpinned his art. Although he is most famous for strong, vibrant colors, that wasn't his initial intention. Originally, he leaned toward the profundity of muted, grayer tones, as witnessed in an early work The Potato Eaters. "Scarcely any color is not gray," he argued. "In nature one really sees nothing else but those tones or shades."5 He was fully convinced of that and based his work on it accordingly. However, he would later switch to the exact opposite: bright, complementary colors, often imposed on a scene rather than being brought out from nature. His stance on contemporary artistic movements flitted about; at first he preferred traditional painting to the new Impressionist style, and later he shifted to the avantgarde, opting for bold forms rather than verisimilitude.

There are two important things to note about van Gogh's experiments in art. The first is the variety of methods, ideas, and resources he applied. Since he struggled with many aspects of painting, I believe that variation was important to his eventually finding a style that would work for him—one that would take advantage of his strengths and diminish the significance of his weaknesses. Although virtuoso talents might be able to latch on to the first style of instruction they are presented with and follow it to completion, others require a great deal of experimentation before the right method sticks. The second important thing to note is his intensity. Like all the ultralearners I've discussed so far, van Gogh was tenacious in his efforts to become an artist. Despite receiving much negative feedback and discouragement, he pursued his art relentlessly, sometimes producing as much as a new painting every day. These two factors, variation and aggressive exploration, enabled him to push through his early obstacles and produce some of the most iconic and brilliant works ever painted.

Experimentation Is the Key to Mastery

When starting to learn a new skill, often it's sufficient simply to follow the example of someone who is further along than you. In discussing the principles of ultralearning, metalearning comes first. Understanding how a subject breaks down into different elements and seeing how others have learned it previously, thus providing an advantageous starting point.

However, as your skill develops, it's often no longer enough to simply follow the examples of others; you need to experiment and find your own path. Part of the reason for this is that the early part of learning a skill tends to be the best trodden and supported, as everyone begins at the same place. As your skills develop, however, not only are there fewer people who can teach you and fewer students you could have as peers (thus lowering the total market for books, classes, and instructors), but you also start to diverge from those you're learning from. Whereas two complete novices have quite similar knowledge and skills, two experts might have quite different sets of skills that

they've already acquired, thus making improving those skills an increasingly personalized and idiosyncratic adventure.

A second reason for the value of experimentation as you approach mastery is that abilities are more likely to stagnate after you've mastered the basics. Learning in the early phases of a skill is an act of accumulation. You acquire new facts, knowledge, and skills to handle problems you didn't know how to solve before. Getting better, however, increasingly becomes an act of unlearning; not only must you learn to solve problems you couldn't before, you must unlearn stale and ineffective approaches for solving those problems. The difference between a novice programmer and a master isn't usually that the novice cannot solve certain problems. Rather, it's that the master knows the best way to solve a problem, which will be the most efficient and clean and cause the fewest headaches later on. As mastery becomes a process of unlearning over accumulation, experimentation becomes synonymous with learning as you force yourself to go outside your comfort zone and try new things.

A final reason for the increasing importance of experimentation as you approach mastery is that many skills reward not only proficiency but originality. A great mathematician is one who can solve problems others cannot, not merely a person who can solve previously solved problems easily. Successful business leaders are those who can spot opportunities others cannot, not merely those who can copy the style and strategy of those before them. In art, it was not only van Gogh's skill but his originality that made him one of the most celebrated painters to have ever lived. As creativity becomes valuable, experimentation becomes essential.

Three Types of Experimentation

In experimentation you can see different levels play out, both in van Gogh's path as an artist and as a model for your own explorations:

1. Experimenting with Learning Resources

The first place to experiment is with the methods, materials, and resources you use to learn. Van Gogh did this extensively at the beginning of his artistic career, trying out different artistic media, materials, and learning techniques: following home-study courses, watching fellow artists, sketching from life and in the studio, and more. This kind of experimentation is useful in helping you discover the guides and resources that work best for you. It's important, however, that your impulse to experiment be matched with a drive to do the necessary work. Although van Gogh tried many different approaches when he first started teaching himself to draw and paint, he also produced an enormous quantity of work based on each of those methods.

A good strategy to take is to pick a resource (maybe a book, class, or method of learning) and apply it rigorously for a predetermined period of time. Once you apply yourself aggressively to that new method, you can step back and evaluate how well it is working and whether you feel it makes sense to continue with that approach or try another.

2. Experimenting with Technique

In the beginning, experimentation tends to focus on materials. However, in most domains of learning, the options for what to learn next expand faster and faster, so the question becomes not "How can I learn this?" but "What should I learn next?" Languages are a prime example. The same basic set of vocabulary and phrases dominates most beginner resources. As you improve, however, the amount of things you could possibly learn next becomes larger and larger. Should you learn to read literature? Converse fluently on a

professional topic? Read comic books? Have business discussions? The specialized vocabulary, phrases, and cultural knowledge in each field multiply, so it becomes necessary to choose what to master.

Once again, experimentation plays a pivotal role. Pick some subtopic within the skill you're trying to cultivate, spend some time learning it aggressively, and then evaluate your progress. Should you continue in that direction or pick another? There's no "right" answer here, but there are answers that will be more useful to the specific skill you're trying to master.

3. Experimenting with Style

After you've matured in your learning a bit, the difficulty often switches from which resources to learn from or which techniques you'd like to master to the style you'd like to cultivate. Although there are some skills that have one and only one "correct" way of doing things, this is not true of most. Writing, design, leadership, music, art, and research all involve developing certain styles, which have different trade-offs. Once you master the basics, there is no longer one "right" way to do everything but many different possibilities, all of which have different strengths and weaknesses. This affords another opportunity for experimentation. Van Gogh tried out many different styles for producing art, varying from those of traditional painters such as Millet, to Japanese woodblock prints, and studied the techniques used by his artist friends such as Gauguin and Rappard. There is no one correct answer, although, like van Gogh, you may find that certain styles work better than others with your unique combination of strengths and weaknesses.

The key to experimenting with different styles is to be aware of all the different styles that exist. Once again van Gogh provides a good model, as he spent an enormous amount of time studying and discussing the works of other artists. That gave him a large library of possible styles and ideas he could adapt to his own work. Similarly, you might want to identify masters in your own line of study and dissect what makes their styles successful to see what you can emulate or integrate into your own approach.

In each level of experimentation, the choices broaden and the possible options to explore go up exponentially. There's a tension, therefore, between spending time trying out different resources, techniques, and styles, and concentrating your efforts on a single approach long enough to become proficient at it. This tension often resolves itself as you cycle through exploring a new avenue in learning and then buckling down to learn it deeply before moving on to something else. Whatever else his failings, it was this pattern of trying out an idea and working on it aggressively that van Gogh applied brilliantly.

The Mindset of Experimentation

There are parallels between the mindset required to experiment and what the Stanford psychologist Carol Dweck refers to as growth mindset.6 In her research, she distinguishes between two different ways of looking at one's own learning and potential. In a fixed mindset, learners believe that their traits are fixed or innate and thus there's no point in trying to improve them. In a growth mindset, in contrast, learners see their own capacity for learning as something that can be actively improved. In some ways, these two types of mindsets become self-fulfilling prophecies. Those who think they can improve and grow, do; those who think they are fixed and immutable remain stuck.

The parallel with the mindset required for experimentation is clear. Experimenting is based on the belief that improvements are possible in how

you approach your work. If you think your learning styles are fixed or that you have certain immutable strengths and weaknesses that will keep you from trying out different ways to approach your skills, you won't be able to experiment at all.

I see the experimental mindset as an extension of the growth mindset: whereas the growth mindset encourages you to see opportunities and potential for improvement, experimentation enacts a plan to reach those improvements. The experimental mindset doesn't just assume that growth is possible but creates an active strategy for exploring all the possible ways to reach it. To get into the right mental space for experimenting, you need not only to see your abilities as something you can improve but understand that there is a huge number of potential avenues to do this. Exploration, not dogmatism, is the key to realizing that potential.

How to Experiment

Experimenting sounds simple but can be quite tricky to implement in practice. The reason is that a flurry of random activity doesn't usually translate into mastery. In order to work, experimenting requires understanding what learning problems you're facing and coming up with possible ways to resolve them. Here are a few tactics that can help you integrate experimentation into your ultralearning projects.

Tactic 1: Copy, Then Create

This is the first strategy for experimenting, which we can see in van Gogh's work. Though van Gogh is best known for his original pieces, he also spent a lot of time copying drawings and paintings he liked by other artists. Copying simplifies the problem of experimentation somewhat because it gives you a starting point for making decisions. If you're learning to paint, as van Gogh did, the possibilities of what kinds of art you can create and techniques you can apply are so vast that it can be difficult or impossible to decide among them. However, if you start by emulating another artist, you can use that foothold to venture further in your own creative directions.

This strategy has another advantage beyond simplifying the choices available to you. In attempting to emulate or copy an example you appreciate, you must deconstruct it to understand why it works. This can often highlight things that the other person does exceptionally well that weren't obvious from the beginning. It may also dispel illusions you may have had about an aspect of the work you thought was important but upon emulating the other person's work you realize was not.7

Tactic 2: Compare Methods Side-by-Side

The scientific method works by carefully controlling conditions so that the difference between two situations is limited to the variable being studied. You can apply this same process to your experiments in learning by trying two different approaches and varying only a single condition to see what the impact is. By applying two different approaches side by side, you can often quickly get information not only about what works best but about which methods are better suited to your personal style.

I applied this to learning French vocabulary. I wasn't sure how effective mnemonics would be so, for a month, I would find a list of fifty new words every day, put together from my regular reading or random encounters with the language, and for half I would simply look them over with their translations I got from the dictionary. With the other half, I made an effort to use a visual mnemonic to link the two meanings. Then I compared how many of the words I remembered from each list on a later test, with words picked

randomly from each side. The result is something you would probably expect after reading the chapters on retrieval and retention: I remembered the words I used mnemonics for at almost twice the rate of those I didn't. That showed that even if creating the mnemonics took a bit more time, they were worth it.
There are two advantages to doing split tests. The first is that as in scientific experiments, you will get much better information about which method works best if you limit the variation to only the factor you want to test. The second is that by solving a problem multiple ways or applying multiple solution styles to it, you will increase your breadth of expertise. Forcing yourself to try different approaches encourages experimentation outside your comfort zone.

Tactic 3: Introduce New Constraints

The challenge of learning in the beginning is that you don't know what to do. The challenge of learning in the end is that you think you already know what to do. It's this latter difficulty that causes us to rerun old routines and old ways of solving problems that are encouraged through habit, not always because the old way is actually best. A powerful technique for pushing out of those grooves of routine is by introducing new constraints that make the old methods impossible to use.
It's practically an axiom of design that the best innovations come from working within constraints. Give a designer unlimited freedom, and the solution is usually a mess. On the other hand, creating specific constraints in how you can proceed encourages you to explore options that are less familiar to you and sharpens your underlying skills. How can you add limitations to force yourself to develop new capacities?

Tactic 4: Find Your Superpower in the Hybrid of Unrelated Skills

The traditional path to mastery is to take a well-defined skill and practice it relentlessly until you have become insanely good at it. This is the path taken by many athletes, who train for decades to perfect their shot, jump, kick, or throw. However, for many areas of creative or professional skills, another, more accessible, path is to combine two skills that don't necessarily overlap to bring about a distinct advantage that those who specialize in only one of those skills do not have. For instance, you might be an engineer who becomes really good at public speaking. You may not be the best possible engineer or the best possible presenter, but combining those two skills could make you the best person to present on engineering topics for your company at conferences, thus giving you access to new professional opportunities. Scott Adams, the creator of Dilbert, likened his own success to following this strategy by combining his background as an engineer with an MBA and a cartoonist.8
This level of experimentation often plays out over multiple ultralearning projects. After I completed my MIT Challenge, I could apply the programming knowledge I had obtained to write scripts to automatically generate flash cards for learning Chinese. Such synergies become possible once you start exploring how one skill you've already acquired can impact another.

Tactic 5: Explore the Extremes

Van Gogh's art pushed well outside normal conventions along many dimensions. His thick application of paint was far away from the thin layers of glazes used by Renaissance masters. His quick application was far more rapid than the careful brushstrokes of other painters. His colors were bold,

often garish, instead of subtle. If you were to draw a chart that mapped out van Gogh's style compared with those of other painters, you would probably see that he lay along the extreme in many dimensions.

An interesting result from mathematics is that as you get to higher and higher dimensions, most of the volume of a higher-dimensional sphere lies near its surface. For instance, in two dimensions (a circle), just under 20 percent of its mass lies in the outer shell described by a tenth of the radius. In three dimensions (a sphere), that number rises to almost 30 percent. In ten dimensions, almost three-quarters of the mass is in that outermost layer. You can imagine learning a complex subject as akin to trying to find an optimal point in a region of higher-dimensional space—except that instead of length, width, and height, those dimensions might be the qualitative dimensions of work, such as van Gogh's complementarity of colors, application of paint, or some other aspect of skill that can be applied in some varying degree of intensity. What this means is that the more complicated a domain of skill is (i.e., the more dimensions it contains), the more space will be taken up by applications of that skill that are extreme across at least one of those dimensions. This suggests that for many skills, the best option is going to be extreme in some way, since so many more of the possibilities are themselves extreme. Sticking to the middle and playing it safe isn't the correct approach because that allows you to explore only a small subset of the total possibilities for your work.

Pushing out to an extreme in some aspect of the skill you're cultivating, even if you eventually decide to pull it back to something more moderate, is often a good exploration strategy. This allows you to search the space of possibilities more effectively, while also giving you a broader range of experience.

Experimentation and Uncertainty

Learning is a process of experimenting in two ways. First, the act of learning itself is a kind of trial and error. Practicing directly, getting feedback, and trying to summon up the right answers to problems are all ways of adjusting the knowledge and skills you have in your head to the real world. Second, the act of experimenting also lies in the process of trying out your learning methods. Try out different approaches, and use the ones that work best for you. The principles I've tried to articulate in this book should provide good starting points. But they are guidelines, not iron rules; starting points, not destinations. Only by experimenting will you be able to find the right tradeoffs between different principles—for instance, when directness is more important and when you should focus on drills or whether retention or intuition is the main obstacle to learning. Experimenting will also help you decide among small differences in approach that no list of principles could possibly cover exhaustively.

Having a mindset of experimentation will also encourage you to explore beyond what you feel most comfortable doing. Many people stick to the same routines, the same narrow set of methods, they apply to learning everything. As a result, there are a lot of things they struggle to learn because they don't know the best way to do so. Copying exemplars, running tests, and pushing to extremes are all ways to push outside your ingrained habits and try out something different. That process will teach you not just abstract learning principles but concrete tactics that will accommodate your personality, interests, strengths, and weaknesses. Are you better off learning a language through practicing speaking or engaging in lots of input through movies and

books? Are you better off learning programming by building your own game or working on open-source projects? These questions don't have a single correct answer, and people have achieved success using a wide variety of different methods.

My own experience with learning has been one of constant experimentation. In university, I focused a lot on making associations and connections. During the MIT Challenge, I switched to making practice the foundation. In my first experience learning a language, I was sloppy, speaking English most of the time. In the second round, I experimented with going to another extreme, to see if I could avoid that sticking point. While doing projects, I've had to adjust my methods frequently. Even though it was only thirty days long, my portrait-drawing challenge involved a lot of trial and error from starting by doing sketches and, when my progress using that approach slowed, trying to do sketches even faster to get more feedback. When that, too, had reached its limits, I spent some time learning a different technique altogether to achieve greater accuracy.

Embedded in my successes are many failures—times where I thought I could get something to work and it ended up failing miserably. Early on in learning Chinese, I thought I could use some kind of mnemonic system to remember the words, with colors for tones and memorized symbols for the syllables. That was because my normal sounds-like method for visual mnemonics wasn't working with the words, which all sounded so different from English. The result was a total failure, and it didn't work at all! Other times, my experiments with new methods worked out great. Most of the techniques I've shared in this book thus far started as ideas I wasn't sure would pan out.

Experimentation is the principle that ties all the others together. Not only does it make you try new things and think hard about how to solve specific learning challenges, it also encourages you to be ruthless in discarding methods that don't work. Careful experimentation not only brings out your best potential, it also eliminates bad habits and superstitions by putting them to the test of real-world results.

Chapter 13: Your first Ultra-learning Project

Step 1: Do Your Research
The first step in any project is to do the metalearning research required to give you a good starting point. Planning ahead will avoid a lot of problems and prevent you from having to make drastic changes to your learning plan before you've even started making progress. Research is a bit like packing a suitcase for a long voyage. You may not bring the right items, or you may forget something and need to buy it on the road. However, thinking ahead and packing your bags correctly will prevent a lot of fumbling later. Your ultralearning "packing" checklist should include, at a minimum:
1. WHAT TOPIC YOU'RE GOING TO LEARN AND ITS APPROXIMATE SCOPE. Obviously, no learning project can begin unless you figure out what you want to learn. In some cases, this is obvious. In others, you may need to do further research to identify which skill or knowledge would be most valuable. If your goal is to learn something instrumentally (to start a business, get a promotion, do research for an article), learning what you need to learn is important and will suggest how wide and deep you need to go. I suggest starting with rather a narrow scope, which can expand as you proceed. "Learning enough Mandarin Chinese to hold a fifteenminute conversation on simple topics" is a lot more constrained than "Learn Chinese," which may include reading, writing, studying history, and more.
2. THE PRIMARY RESOURCES YOU'RE GOING TO USE. This includes books, videos, classes, tutorials, guides, and even people who will serve as mentors, coaches, and peers. This is where you decide what your starting point will be. Examples: "I'm going to read and complete the exercises in a book on Python programming for beginners" or "I'm going to learn Spanish through online tutoring via italki.com" or "I'm going to practice drawing by making sketches." In some subjects, static materials will determine how you proceed. In others, they will be supports to back up your practice. In any case, they should be identified, purchased, borrowed, or enrolled in before you begin.
3. A BENCHMARK FOR HOW OTHERS HAVE SUCCESSFULLY LEARNED THIS SKILL OR SUBJECT. Almost any popular skill has online forums where those who have learned the skill previously can share their approaches. You should identify the things other people who have learned the skill have done to learn it. This doesn't mean you need to follow exactly in their footsteps, but it will prevent you from completely missing something important. The Expert Interview Method in chapter 4 provides a good method for following up on this.
4. DIRECT PRACTICE ACTIVITIES. Every skill and subject you're learning will be used somewhere eventually, even if it's as simple as using it to learn something else. Thinking about how you might use the skill can enable you to start finding opportunities to practice it as early as possible. If direct practice is impossible, you should nonetheless identify opportunities for practice that mimic the mental requirements of using the skill.
5. BACKUP MATERIALS AND DRILLS. In addition to the principal materials and methods you'll be using, it's a good idea to look at possible drills and backup materials you may want to use. Backup materials are often

good if you recognize that a certain tool or set of materials might be useful but you don't want to be overwhelmed in the beginning.

Step 2: Schedule Your Time

Your ultralearning project doesn't need to be an intensive, full-time endeavor to succeed. However, it will require some time investment, and it's better to decide on how much time you are willing to devote to learning in advance than simply hope that you'll find the time later. There are two good reasons for planning your schedule ahead of time. The first is that this way you subconsciously prioritize your project by setting it down on your calendar ahead of other things. The second is that learning is often frustrating and it is almost always easier to click over to Facebook, Twitter, or Netflix. If you don't set aside time to learn, it will be a lot harder to summon up the motivation to do so.

The first decision you should make is how much time you're going to commit. This is often dictated by your schedule. You may have a gap in employment that allows intensive learning, but only for a month. Alternatively, you may have a full schedule that permits you to devote only a few hours per week to learning something new. Whatever time you can commit, decide on it in advance.

The second decision you need to make is when you are going to learn. During a few hours on Sunday? By waking up an hour earlier and putting in the time before work? In the evening? During lunch breaks? Once again, the best thing is to do whatever makes it easiest based on your schedule. I recommend setting a consistent schedule that is the same every week, rather than trying to fit in learning when you can. Consistency breeds good habits, reducing the effort required to study. If you have absolutely no choice, an ad hoc schedule is better than none, but it will require more discipline to sustain.

If you do have some flexibility in your schedule, you may want to optimize it. Shorter, spaced time chunks are better for memory than crammed chunks are. However, some types of tasks, such as writing and programming, have a long warm-up time that may benefit from longer uninterrupted time chunks. The best way to find out what is best for you is to practice; if you find it takes a long time to warm up, opt for longer spaces in your schedule. If you find you can get to work within a few minutes of starting, shorter chunks of time spread out will be helpful for long-term retention.

The third decision you need to make is the length of time for your project. I generally prefer shorter commitments to longer ones because they are easier to stick with. An intensive project that lasts a month has fewer potential interruptions from life or from your motivation changing and waning. If you have a big goal you want to accomplish that can't be done in a short time frame, I suggest breaking it up into multiple smaller ones of a few months each.

Finally, take all this information and put it into your calendar. Scheduling all the hours of work on the project in advance has important logistical and psychological benefits. Logistically, this will help you spot potential conflicts in your schedule due to vacations, work, or family events. Psychologically, it will help you remember and act on your initial plan better than if it were written on a piece of paper tucked into a desk drawer. What's more, the act of scheduling demonstrates your seriousness about doing the project.

I can clearly remember writing down my hypothetical studying schedule before starting the MIT Challenge. It had me up and studying by 7 a.m. and working until 6 p.m., with only a short break for lunch. Although my actual

schedule, in practice, rarely reached that ideal (even in my most intensive early days, I almost never got in eleven hours straight), the mere act of writing down the schedule helped prepare me psychologically for the project ahead. If you're unwilling to put time into your calendar, you're almost certainly unwilling to put in time to study. If you're waffling at this stage, that's a good sign your heart isn't really in the right place to get started.

As a bonus step, for those who are embarking on longer projects of six months or more, I strongly recommend doing a pilot week of your schedule. This is simple: test your schedule for one week before you commit to it. This will give you firsthand knowledge of how difficult it will be and prevents overconfidence. If you already feel burned out after the first week, you may need to make adjustments. There's no shame in going back and retooling your plan to make it fit your life better. Making this kind of adjustment is a lot better than giving up midway because your plan was doomed from the start.

Step 3: Execute Your Plan

Whatever plan you started with, now is the time to do it. No plan is perfect, and you may realize that what you're doing for learning departs from the ideal, as established by the ultralearning principles. You may notice that your plan relies too much on passive reading rather than retrieval practice. You may see that the way you're practicing is a winding detour away from where you will actually want to use it. You may feel as though you're forgetting things or memorizing them without really understanding them. That's okay. In some cases, you won't be able to have the perfect learning approach because the resources to do so don't exist. However, becoming sensitive to how the way you're learning isn't aligned with the principles is a good way to feel out changes you can make to improve it.

Here are some questions to ask yourself to determine whether you're slipping from the ideal:

1. METALEARNING. Have I done research into what are the typical ways of learning this subject or skill? Have I interviewed successful learners to see what resources and advice they can recommend? Have I spent about 10 percent of the total time on preparing my project?
2. FOCUS. Am I focused when I spend time learning, or am I multitasking and distracted? Am I skipping learning sessions or procrastinating? When I start a session, how long does it take before I'm in a good flow? How long can I sustain that focus before my mind starts to wander? How sharp is my attention? Should it be more concentrated for intensity or more diffuse for creativity?
3. DIRECTNESS. Am I learning the skill in the way I'll eventually be using it? If not, what mental processes are missing from my practice that exist in the real environment? How can I practice transferring the knowledge I learn from my book/class/video to real life?
4. DRILL. Am I spending time focusing on the weakest points of my performance? What is the rate-limiting step that is holding me back? Does it feel as though my learning is slowing down and that there's too many components of the skill to master? If so, how can I split apart a complex skill to work on smaller, more manageable components of it?
5. RETRIEVAL. Am I spending most of my time reading and reviewing, or am I solving problems and recalling things from memory without looking at my notes? Do I have some way of testing myself, or do I just assume I'll remember? Can I successfully explain what I learned

yesterday, last week, a year ago? How do I know if I can?
6. FEEDBACK. Am I getting honest feedback about my performance early on, or am I trying to dodge the punches and avoid criticism? Do I know what I'm learning well and what I'm not? Am I using feedback correctly, or am I overreacting to noisy data?
7. RETENTION. Do I have a plan in place to remember what I'm learning long term? Am I spacing my exposure to information so it will stick longer? Am I turning factual knowledge into procedures that I'll retain? Am I overlearning the most critical aspects of the skill?
8. INTUITION. Do I deeply understand the things I'm learning, or am I just memorizing? Could I teach the ideas and procedures I'm studying to someone else? Is it clear to me why what I'm learning is true, or does it all seem arbitrary and unrelated?
9. EXPERIMENTATION. Am I getting stuck with my current resources and techniques? Do I need to branch out and try new approaches to reach my goal? How can I go beyond mastering the basics and create a unique style to solve problems creatively and do things others haven't explored before?

Together these principles serve as directions, not destinations. In each case, look at how you're currently progressing through your materials, and see what you could do differently. Do you need to switch resources? Do you need to stick to the same resources but spend more time on a different kind of practice? Should you seek out new environments for feedback, directness, or immersion? These are all subtle adjustments you can make along the way.

Step 4: Review Your Results

After your project is finished (or if you end up putting it on pause for some reason), you should spend a little time analyzing it. What went right? What went wrong? What should you do next time to avoid making those same mistakes?

Not all of your projects will be successful. I've had ultralearning projects that I felt good about. I've had others that didn't work out as well as I had hoped. Although the tendency is to blame willpower and motivation, very often the problems with projects can be traced back to their conception. I worked on one project devoted to improving my Korean, after my trip, by investing five hours per week. It wasn't as successful as I had hoped because I didn't invest enough time in focusing on immersive, direct practice from the get-go. Instead, my study method depended a lot on textbook exercises, which were boring and didn't transfer too well to the real world. If I had thought a little more about it, I would have spent a week or two ahead of time trying to find places to practice, instead of trying to pivot midway, when I was already losing some motivation. This struggle illustrates that mastering the principles is a lifelong process. Even after many experiences learning languages, and knowing what works well, I slipped into a less effective approach because I didn't plan my project adequately. In other cases a project might not work out as you had hoped, but that lesson will still be valuable. I started with a project to learn cognitive science more deeply, going from a book list. Eventually, however, a lot of that project morphed into a desire to do research for this book, which put me into contact with a lot of science, now combined with an outlet for a more direct way to apply it.

Even your successful projects are worth analyzing. They can often tell you more than your failures because the reasons a successful project succeeded are the very elements you want to retain and replicate for the future. With

ultralearning, as with all self-education, the goal isn't merely to learn one skill or subject but to hone and enhance your overall learning process. Each successful project can be refined and improved for the next one.

Step 5: Choose to Maintain or Master What You've Learned

After you've learned your skill and analyzed your efforts, you have a choice to make. What do you want to do with the skill? With no plan in place, most knowledge eventually decays. This can be alleviated somewhat by following the principles of ultralearning. However, all knowledge decays without any form of intervention, so the best time to make a choice about how you're going to handle that is right after you learn something.

Option 1: Maintenance

The first option is to invest enough practice to sustain the skill but without any concrete goal of getting it to a new level. This can often be accomplished by setting up a habit of regular practice, even if it is a minimal one. As mentioned in the chapter on retention, one of the worries I had after the year without English project was that learning languages so intensively over a short period of time might lead not just to rapid learning but to rapid forgetting. As a result, I made an effort to continue practice after the trip finished, spending thirty minutes a week on each language in the first year and thirty minutes a month on each language in the year after that.

Another option is to try to integrate the skill into your life. This is how I maintain my programming skills, where I write Python scripts to handle work tasks that would otherwise be cumbersome or annoying. This kind of practice is more sporadic, but it ensures that I will keep it up enough to make it usable. This kind of lightweight usage is far from the deep math and algorithms I learned from my MIT coursework, but it is enough to keep a foot in the door if I want to embark on a bigger project at a later time.

Forgetting, as was discovered by Hermann Ebbinghaus more than a hundred years ago, falls off with an exponentially decaying curve. That means that memories that are retained for longer are less and less likely to be forgotten when you follow up at a later date. This pattern suggests that maintenance practice, too, can fall off on a decaying rate, so that the bulk of the knowledge you've acquired will be preserved. This means you might want to start with a habit of more serious practice but reduce the time spent on it a year or two after your project is finished to still get most of the benefit, as I did with the languages I studied.

Option 2: Relearning

Forgetting isn't ideal, but for many skills the costs of relearning the skill later are smaller than the costs of keeping it continuously sharp. There are a couple reasons for this. First, you may have learned more than you actually need, so if some of that knowledge selectively decays due to disuse, it is automatically going to be the less important knowledge that you acquired. I studied a lot of MIT subjects that I don't think I'll ever use again, although understanding the gist of them might come in handy later. Therefore, keeping my ability to prove theorems of modal logic, for example, up to date has only marginal value. Knowing what modal logic is and where I might apply it in case I want to learn something that requires it is probably enough.

Relearning is generally easier than first-time learning. Although performance on tests drops off dramatically, the knowledge is likely inaccessible rather than completely forgotten. This means that doing a refresher course or practice series can be enough to reactivate most of it in a

fraction of the time it took to learn it initially. This may be the optimal strategy for subjects that you need to use infrequently and for which situations for using them won't pop up without warning. Often, recognizing that a certain domain of knowledge is helpful for a particular problem type is more important than the details of solving the problem, since the latter can be relearned but forgetting the former will cut you off from solving those problems.

Option 3: Mastery

The third option, of course, is to dive deeper into the skill you have learned. This can be done through continued practice at a lighter pace or by following up with another ultralearning project. A common pattern I've noticed in my own learning is that an initial project covers a wider territory and some basics and exposes new avenues for learning that were previously obscured. You might identify a subtopic or branch of skill within the domain you were learning before that you want to follow up. Otherwise, you may decide to transfer a skill learned in one place to a new domain. One of my goals after returning from my trip to China was to learn to read Chinese better, which had been only an incidental goal while I was traveling there.

Mastery is a long road that extends far beyond a single project. Sometimes the barriers you overcome in your initial effort are enough to clear the way for a slow process of accumulation to reach eventual mastery. In many domains, getting started is quite frustrating, so it's difficult to practice without a certain amount of effort. After that threshold is reached, however, the process switches to being one of accumulating huge swaths of knowledge and therefore can proceed at a more patient pace. On the other hand, some projects will get stuck, and you will need to spend time unlearning and push through your frustrations again to get ahead. Those kinds of projects benefit more from the precise and aggressive methods of ultralearning to reach eventual mastery.

Alternatives to Ultralearning: Low-Intensity Habits and Formal Instruction

At the start of this book, I pointed out that ultralearning is a strategy. Being a strategy implies that it is good for solving certain problems. Given that the practice is somewhat uncommon, I wanted to spend the book focused on this strategy, rather than try to give a diffuse description of all possible ways you can learn effectively. However, now that I've done that, I think it's worthwhile to touch on two other strategies that can work with ultralearning, in different contexts.

None of the ultralearners I encountered approaches learning the same way for every kind of learning they do. Benny Lewis, for example, does do intensive learning projects for languages, but he has learned most of his languages over repeat visits to the countries they are spoken in, digging deeper into languages he previously established in intense bursts. Roger Craig did learn aggressively to win at Jeopardy!, but he also engaged in more leisurely acquisition of trivia when his appearance on the game show wasn't imminent. Being an ultralearner doesn't imply that everything one learns has to be done in the most aggressive and dramatic fashion possible. I want to briefly consider the two main alternative strategies to ultralearning to see how they fit into a bigger picture of lifelong learning.

Alternative Strategy 1: Low-Intensity Habits

Low-intensity habits work well when engaging in learning is spontaneous, your frustration level is low, and learning is automatically rewarding. In these

cases, when the barriers to learning are fairly low, all you need to do is show up. No fancy project, principles, or effort is required. Once you reach a conversational level in a language, for instance, it's often fairly easy to travel and live in a country where it is spoken, accumulating more and more vocabulary and knowledge over a longer period of time. Similarly, once you become good enough at programming to use it for your job, the job itself will push you to learn new things at a regular pace. If you've mastered the basics of a subject so that you can read denser books about it, reading books on the topic is mostly a matter of putting in time, not developing ingenious learning strategies.

Of course, there's a spectrum of habits, from zero-effort, spontaneous engagement to the high-effort, rapid skill acquisition of ultralearning. Most habits are somewhere in between, necessitating a bit of effort but perhaps not the full-scale intensity of an ultralearning project. You may have learned enough Excel to create your own spreadsheet macros, but you don't always find opportunities or time to use it, so you need to push yourself a little to practice. You may have learned public speaking well, but it still takes some guts to go onstage. The decision of whether the right step forward is to set up long-term habits or to create a concentrated ultralearning project is often not crystal clear and may depend more on your personality and life constraints than a hard-and-fast rule.

Habits tend to work best when the act of learning is mostly a process of accumulation, adding new skills and knowledge. Ultralearning and more deliberate efforts are better suited to when improvement in a field requires unlearning ineffective behaviors or skills. Increasing your vocabulary in a foreign language is often a slow process of accumulation; you are learning words you didn't know before. Improving your pronunciation, on the other hand, is an act of unlearning. You're training yourself to use different muscular movements that aren't natural to you. Ultralearning also tends to be better for areas in which learning has greater frustration barriers and psychological obstacles that make any form of practice too great an effort to be an easily established habit.

Throughout this book, we've explored the trade-off that occurs between doing what's effective for learning and what's easy and enjoyable. Sometimes what's the most fun isn't very effective, and what's effective isn't easy. This trade-off may push you to opt for easier, more enjoyable forms of learning that sacrifice some effectiveness. However, in my own experience, I've noticed that enjoyment tends to come from being good at things. Once you feel competent in a skill, it starts to get a lot more fun. Therefore, although a tension between the two can exist in the short term, I think pursuing aggressive ultralearning projects is often the surer way to enjoy learning more, as you're more likely to reach a level where learning automatically becomes fun.

Alternative Strategy 2: Formal, Structured Education

In the beginning of this book, I explained that ultralearning is self-directed, although not necessarily solitary. Being self-directed is about who is making decisions, not about whether other people are involved. Therefore, there is no contradiction in pursuing ultralearning within a school or university. That might be the best way to learn the skills you want to acquire. Just treat it like any other resource.

That distinction notwithstanding, I think it's worth talking about other reasons you might want to pursue formal education rather than ultralearning.

The most obvious is to acquire credentials. If those are necessary or recommended for your chosen line of work, you might need to be satisfied with making sacrifices for your learning in order to acquire them. The message of this book isn't that you should drop out of school to learn on your own but that you should take control over your own learning, wherever that may be. Another reason to pursue formal education is that it creates a learning environment that may be beneficial. Although many aspects of school are woefully indirect and ineffective, others fare much better. Design and art schools often function like apprenticeships. Some programs allow for team projects that are difficult to start on your own. Finally, the postgraduate levels of academia create communities where immersion is possible, so that you acquire not only the ideas that are written down in books and papers but those that are communicated indirectly between experts in their fields. Ultralearning isn't a rejection of those opportunities, and I would be disappointed if I were to be misread as arguing that they don't exist or are better replaced with a solitary learning effort. The correct mindset to cultivate isn't a rejection of anything slower or standardized but a recognition that the possibilities for learning anything are considerably broader than they might first appear.

Lifelong Learning

The goal of ultralearning is to expand the opportunities available to you, not narrow them. It is to create new avenues for learning and to push yourself to pursue them aggressively rather than timidly waiting by the sidelines. This is not going to be a method suitable for everyone, but for those who feel inspired to use it, I hope it provides a start.

Chapter 14: An Unconventional Education

Judit Polg r is widely considered to be the best female chess player of all time. At age seven, she won her first game against a chess master while blindfolded. At twelve, she was ranked fifty-fifth of all chess players in the world by the F d ration Internationale des checs (FIDE) (World Chess Federation). By fifteen, she had become the youngest-ever grand master, beating the illustrious Bobby Fischer's previous record by one month. At her peak, Polg r was ranked eighth in the world and competed in the World Chess Championship, the only woman ever to have done so.

Chess is a game dominated by adult men. Thus a young girl competing was bound to arouse both the curiosity and the prejudice of her competitors. Grand master Edmar Mednis, facing off against the young Polg r, noted that he was very careful to play his best against the young prodigy, noting that "Grandmasters don't like to lose to 10-year-old girls, because then we make the front page of all the papers."[1] Some of her competitors celebrated the obvious genius of Polg r's play. Grand master Nigel Short said Polg r might be one of the "three or four great chess prodigies in history."[2] Mikhail Tal, a former world champion, suggested when Polg r was still twelve that she might eventually be a contender for world champion.

Garry Kasparov was less convinced. The former world champion has been considered by many to be the best chess player of all time. He is most famous for his matches against IBM's Deep Blue chess computer, winning against the machine in 1996 and losing in 1997, marking the transition to machine dominance in a game that had historically been considered one of the highest expressions of human creativity and intelligence. Kasparov was less than enthusiastic about the young Polg r's chances. "She has fantastic chess talent, but she is, after all, a woman. It all comes down to the imperfections of the feminine psyche. No woman can sustain a prolonged battle."[3]

That casual prejudice erupted into a full-blown controversy during their first match. Polg r, then only seventeen, sat across from the chess legend and former world champion, playing in a tournament in Linares, Spain. Although chess is often viewed as being coldly rational, as both players calculate moves with precision to reach their final outcome, the psychological effect of sitting opposite the dominant Russian can't be understated. Given that incredible tension, it was almost unbelievable when Kasparov, on move thirty-four, placed his knight and, after briefly lifting his fingers from the piece, changed his mind and moved it to a better square. Polg r was stunned. According to chess rules, once a player stops touching a piece, the move is done; no changes are allowed. Half in disbelief, she glanced at the referee, expecting him to indicate that Kasparov had cheated. Yet the referee didn't challenge the grand master. Reeling from the move, Polg r lost the game. Asked why she hadn't challenged the illegal move herself, Polg r explained, "I was playing the World Champion and didn't want to cause unpleasantness during my first invitation to such an important event. I was also afraid that if my complaint was overruled I would be penalized on the clock when we were in time pressure."[4] Still, after the game had concluded, she was incensed. She confronted Kasparov later in the hotel bar, demanding "How could you do this to me?"[5] "She publicly accused me of cheating," Kasparov said when defending himself against the accusation. "I think a girl of her age should be taught some good manners."[6] It would be years before

the two spoke again, but whereas Kasparov was already well established in the chess world, Polg r was just getting started.

Polg r is singular, not only for her prowess in the male-dominated game but also for how she learned to play. Unlike other famous players, such as Bobby Fischer, who spontaneously developed an obsession for the game, Polg r's chess genius was no accident. Instead, it started with one man's mission to raise genius children.

The Making of a Genius

Years before Judit faced down the legendary grand master, before her meteoric rise in chess or even her first game, her father, L szl Polg r, had made a decision: he was going to raise a genius. While studying intelligence in college, he had begun contemplating his project before having children or even a wife. "A genius is not born but educated and trained," he maintained. 7 Studying the biographies of hundreds of great intellectuals, he was convinced that genius could be manufactured. "[W]hen I looked at the stories of geniuses," he later remarked, "I found the same thing. . . . They all started at a young age and studied intensively." 8

But first, he had to find a partner for his pedagogical experiment. He found it in Kl ra, a Ukrainian foreign-language teacher. Far from your normal love letters, he first corresponded to her by explaining his idea to raise genius children. After agreeing to his proposal, the two met and were married in the Soviet Union before moving back to his native Hungary. Together the couple had three children, Zsuzsa, Zs fia, and Judit. Although Judit ended up becoming the most intensely competitive and famous, all three became world-class chess players, with Zsuzsa also becoming a grand master and Zs fia reaching the status of international master.

Living modestly in a cramped apartment, L szl and his wife decided to devote themselves full-time to their project of raising genius children. Their strategy was to begin the girls' educations early, at age three, and move on to specialization in one domain no later than six. They would start by introducing the girls to that subject slowly, in short bursts, and turn it into play so that they would actively want to practice rather than feel coerced into doing so. That strategy, however, didn't specify a topic. L szl and Kl ra considered many different possible study topics for their daughters, from foreign languages to mathematics. Eventually they settled on chess, because it was objective and progress in it was easy to measure. No doubt the preeminence of chess intellectually in the socialist countries in those years added weight to their decision to focus on the game.

Despite the emphasis on chess, L szl did not believe that such specialization needed to come at the sacrifice of the broader education of his girls. All three learned foreign languages (Zsuzsa, the eldest, learned eight), as well as mathematics, table tennis, swimming, and other subjects. The decision to focus on chess with all three girls was made for a practical reason: given the intense devotion both parents would need to have, in both resources and time, spreading their effort over three different disciplines would have been more than their budget or schedule could bear.

Zsuzsa was first to start. She began playing at age four. Six months later, she was going with her father to the smoke-filled chess clubs of Budapest, playing against elderly men—and winning. By the time it was Judit's turn, she was already motivated to begin her training. Zsuzsa and Zs fia played chess in a small room L szl had devoted to the game, and she didn't want to be left out.

Soon the three girls were a team, traveling around to compete against much older, usually male players. Their shared mission created camaraderie rather than jealousy in playing a game that very often pushed back against their unusual status. The Hungarian Chess Federation's policy was for women to compete in women-only chess events. However, L szl was strongly against the idea. "Women are able to achieve results similar, in fields of intellectual activities, to that of men," he felt. "Chess is a form of intellectual activity, so this applies to chess. Accordingly, we reject any kind of discrimination in this respect."9 Discrimination had already prevented Zsuzsa from obtaining the grand master title at fifteen. As the youngest, by the time Judit approached some of these barriers, her elder sisters had already broken them down a bit, allowing her to forgo competing in the women-only tournaments.

Although their education was the same and all three reached impressive heights in chess, the girls' prowess was not identical. Zs fia was the weakest of the three; although reaching the impressive grade of international master, she later decided to retire from chess to focus on art and her family. Zsuzsa had specialized a little less in chess from an early age, learning eight languages, which her father admits might have distracted her from reaching her maximum chess potential. Judit started more slowly, according to Zsuzsa, but she had the strongest work ethic, being "obsessed" with chess to a degree unusual even for her family.

Rematch with Kasparov

Eight years after her controversial defeat by Kasparov, Judit had another opportunity to face down the legendary grand master. In the 2002 Russia Versus the Rest of the World match in Moscow, Judit faced off against Kasparov in a game of rapid chess, with only twenty-five minutes allocated to each player. Judit played the Ruy Lopez, or Spanish game, named after the sixteenth-century Spanish bishop and chess strategist. This uses one of the most common openings in chess, moving the knight and bishop out to good squares on the second and third moves. Kasparov countered with the Berlin Defense, moving a second knight to the board while ignoring the potential danger created by his opponent's bishop; this was known to be a solid counter, often leading to draws. Kasparov wasn't taking any chances. After a flurry of exchanged pieces, both positions were quite close. Judit, as white, had castled her king into safety. Kasparov, as black, in losing the opportunity for the same safety had retained both the light-square and dark-square bishop pair, a powerful combination that can often be decisive in winning a game. Judit calmly pushed forward, cornering one of Kasparov's bishops and neutralizing his advantage. Slowly but surely, her moves continued to improve her position while Kasparov's looked increasingly questionable. Eventually, the small positional advantages Judit had accumulated over the midgame were threatening to win. Two pawns down and facing looming threats of checkmate, Kasparov resigned.

Following his defeat, Kasparov revised his earlier assessment of Judit's ability and indeed the idea of women competing against men at the highest levels of the game. "The Polg rs showed that there are no inherent limitations to their aptitude—an idea that many male players refused to accept until they had unceremoniously been crushed by a twelve-year-old with a ponytail."10

The Aftermath of an Experiment

L szl Polg r's conviction that he could turn any healthy child into a genius is the kind of assertion that would make him seem like a crackpot if he hadn't actually been successful. Nonetheless, a careful reader will note that, as far as

experiments go, L szl 's has plenty of holes that keep it from becoming a model of scientific purity. There was no control group, for starters. All three of the Polg r sisters received the same education. There was no fourth sister who went to school the normal way and missed L szl 's special training. There was no randomization. L szl didn't adopt a random child to raise in his unusual system but taught his own. This also means that the influence of genetics can't be ignored. The success of all three children may be owing to hereditary, rather than acquired, talents. There was also no blinding. All the Polg rs knew they were part of something special, a unique mission that set them apart from other families. Therefore, in the ongoing debate between nature and nurture, the success of the Polg r sisters might be suggestive of the role that unorthodox education can play, but it is far from definitive.
Despite its failings as a purely scientific experiment, the Polg rs' work is certainly a window into what might be possible. All three girls achieved enormous results in chess. Although we cannot know for certain, it seems likely that they could have succeeded in any number of other domains as well. Similarly, although L szl 's methods were strange, it does not seem as though the girls suffered, either in their broader education or in their emotional well-being. They were self-confident and happy and grew up to be successful, emotionally stable adults with loving families of their own. When asked whether his strange pedagogical methods had robbed his girls of a normal childhood, L szl argued the opposite, that it is a normal, mediocre education that often leads to unhappiness. Interviewer Endre Farkas, who worked with Polg r on his book Raise a Genius!, asked, "Have they been educated too narrowly, deprived of a carefree childhood? I was able to observe the Polg rs. . . . One can clearly see that they are happy."11

Educating Ultralearners?

Prior to doing the research for this book, all of the ultralearners I had met were ambitious self-starters. I was convinced that ultralearning was something that held great potential for the individual. However, owing to the intensity and commitment required by the learners themselves, I was skeptical that ultralearning would have any direct implications for the educational system at large. Children already struggle against onerous studying conditions, and it seemed to me that increasing the intensity of study would only increase their stress and anxiety.
Psychologists recognize a large difference between goals that people pursue intrinsically, based on their own interests, decisions, and targets, and goals that they pursue extrinsically, pushed by overbearing parents, punishing curricula, or demanding employers. The latter type, because the motivation for conforming to them comes primarily from outside social pressures, are the cause of much misery. Tales of depression, anxiety, and even suicide are distressingly common in environments where the pressure to perform on standardized tests is ratcheted up to an uncomfortable degree. Ultralearning, because it is a self-driven quest, not an externally imposed obligation, doesn't need to be this way. However, because of its very nature, it was unclear to me whether it was something that could be taught.
The Polg r sisters are an unusual case, then, because although they were trained from a very early age and worked incredibly hard, they don't seem to have been harmed psychologically by the pressure. In contrast to the stereotypical "tiger" parent, their parents encouraged their unusual specialization through play and positive feedback, not authority and punishment. The Polg r sisters all continued to play chess well into

adulthood at the competitive level. The obsession into chess, therefore, was clearly something fostered, rather than imposed. At the same time, their participation in the experiment wasn't exactly voluntary. L szl had dreamed up his goal of raising geniuses before knowing whether his children would consent to the program, so it was not a case of each daughter discovering for herself that she wanted to devote herself to an intense regimen of chess practice. That feature of the Polg r experiment interested me the most, because it seemed as if L szl and Kl ra had found a loophole in the normal expectation that pushing others to study intensely necessarily leads to misery.

How to Raise an Ultralearner

L szl Polg r wrote a book entitled Raise a Genius!, documenting his unorthodox approach to education.* In the book, he outlined his strategy for turning any normal, healthy child into a genius, provided the parents are willing to go to the extremes he and his wife dedicated to the task.

The first step is to start early. The child's education should begin no later than three, and specialization should begin no later than six. Although the exact extent to which learning becomes harder as we age is unclear, there is evidence from fields such as music and languages that children's brains are more plastic and flexible when younger. L szl took this idea to the extreme, encouraging training far earlier than is typical for early-childhood education.

The second step is to specialize. Although the Polg r sisters did learn languages, mathematics, sports, and other subjects, their focus was always on chess. L szl noted that "starting from 4–5 they played chess 5 or 6 hours a day."12 That specialization seems to have had two roles in his strategy for raising geniuses. The first is that it took advantage of any hypothetical flexibility that younger children possess to learn new subjects easily. The second is that by specializing in one subject, the children could reach proficiency at a much younger age. Winning against older and more experienced opponents in chess built their confidence and competitive spirit, so that they actively wanted to practice more to improve themselves. Had the girls spread their intellectual appetites too broadly, they might not have developed the self-confidence that leads to intense practice.

The third step was to make practice into play. Chess, being a game, is naturally suited to play. However, L szl was insistent on introducing all subjects to the girls as forms of play. When the girls would become distracted or get up and wander around while playing a game, they weren't punished but encouraged to let their minds wander as they sought a solution. Keeping the game fun and light, especially when the children were young, was a key stepping-stone to developing the drive and self-confidence that would support more serious efforts later. However, it is important to keep in mind as L szl insisted that "play is not the opposite of work" and "a child does not need play separate from work, but meaningful action," adding "learning presents them with more enjoyment than a sterile game."13 Play and work combined in the Polg rs' approach to learning, with no rigid boundary between them.

Fourth, L szl was careful to create positive reinforcement to make chess a pleasant, rather than frustrating, experience. "Failure, suffering, and fearfulness decrease achievement. Following a number of successive failures, even a damaging inhibitory complex can be created," he explained.14 Starting with the behaviorists, psychologists have known in detail that having a positive experience, such as winning a game, can create a desire to repeat the behaviors that led to the experience. Negative experiences, from losing, becoming confused, or experiencing frustration against a stronger opponent

to facing an opponent who is too easy and robs the player of the satisfaction of pulling off an impressive victory, reduce enthusiasm. L szl carefully established the cycles of positive feedback early on. In the beginning, when he was still a stronger player than the girls, he would adjust his play so that they would be challenged but still win enough of the time to find the game enjoyable. “We should make sure not to always win against the child; we should let them win sometimes so that they feel they are also capable of thinking,” he wrote, adding “At the start it is most important to awake interest. . . . We should get the child to love what they do—to such a degree that they do it almost obsessively.”15

Finally, L szl was entirely against coercing learning. Self-discipline, motivation, and commitment, he felt, must come from the girls themselves. He explained, “One thing is certain: one can never achieve serious pedagogical results, especially at a high level, through coercion.”16 He also felt that “one of the most important educational tasks is to teach selfeducation.” 17 This final step of his process was particularly important for his daughters, as they quickly outpaced their father’s ability. Had they not been encouraged to develop their own abilities to teach themselves and adjust their learning, they might have become decent chess players but certainly not grand masters.

In addition to these basic principles, L szl and Kl ra devoted themselves intensely to providing every opportunity for the advancement of their daughters, cultivating a database of more than two hundred thousand matches, buying every chess textbook they could find, and recruiting chess tutors for their daughters. The girls lacked no opportunity to study and improve at the game. The Polg r house, with diagrams of chess positions hanging on the walls, became a temple devoted to the practice of the ancient game. For L szl and Kl ra, raising their children was more than a full-time job as they fostered the girls’ talents by both assembling resources and schooling them at home.

Ultralearning Principles in Action

In addition to Polg r’s principles of raising genius children, I found it interesting that all of the principles of ultralearning I’ve discussed this far were present in their approach to learning.

1. Metalearning

Polg r devoted himself full-time to understanding how people learn chess and under what conditions his daughters would thrive. He created a huge library of chess positions, strategies, and lists of games, which, in the days before widespread internet, was no small feat. He also articulated a plan for coaching the girls in the game when they were still very young, starting by teaching them first to name the squares on the board and later to know how the pieces moved. That slow progression allowed the girls to pick up the game even before their other cognitive abilities had developed.

2. Focus

L szl considered “the ability to handle monotony, the capability to sustain interest and persistent attention” as key traits he aimed to instill in his daughters. The girls twice took part in twenty-four-hour chess marathons when they were fifteen, nine, and eight years old, respectively, needing to complete one hundred matches in the time period. Chess is a game not merely of flickers of brilliance but of endurance and stamina. Training focus was a large part of L szl ’s system for his daughters, as he encouraged them to focus their minds on the problem and not get distracted.

3. Directness

L szl took his daughters to games with men when they were as young as four, showing them how the game was to be played against opponents who would really offer a challenge. The girls played many, many games of chess, which formed the backbone of their abilities. That allowed them to learn not only how to play the game well but also to deal with variables such as time pressure and the psychological insecurities of playing against older, more intimidating opponents. By using chess timers even for casual games, the girls practiced in an environment that more closely matched the one they would face in tournaments.

4. Drill

L szl varied the approaches to studying the game, starting his daughters off with memorizing first the names of the squares, then the movements of key pieces. Chess puzzles, hanging from the walls of the house, became the girls' homework, as they had to solve the different tactical positions and come up with creative solutions. Blitz and blindfolded games allowed the girls to get better at thinking more quickly and mentally simulating the game.

5. Retrieval

For retrieval, L szl explained, "We should not tell them everything; we should try to get the child to say something!" Using what he described as the "Socratic method" for chess, posing questions his girls must answer instead of telling them to remember a presolved solution, he was using the right method to encourage the expansion of their memory and understanding. Blindfolded games, once again, formed a powerful component of the girls' strategy. By practicing without looking at the board, it forced them to cultivate the ability to follow positions in their head, which was useful not only for retaining key chess patterns long term but also for honing the ability to simulate moves on the board that an opponent might play.

6. Feedback

L szl encouraged considerable play with real opponents but was careful to select "suitable partners, who have a generally similar playing ability." Interestingly, the feedback here was carefully controlled, not only to provide the girls with enough challenge (the Polg rs' insistence on playing in men's tournaments in order to face such a challenge was an example of this) but also to avoid too great a challenge when their abilities were still nascent. Cultivating positive feedback was important early on, and L szl was ever ready to adjust the flow of the game to make sure it was at a level that would stimulate further play.

7. Retention

L szl focused on having the girls recall chess patterns from memory and increased the speed of games to make elements of their play more automatic and less susceptible to forgetting. Memorizing chess patterns is a large part of playing the game successfully, and this was aided both by spaced practice and through specialized drills such as blitz and blindfolded games.

8. Intuition

Mirroring the Feynman Technique, L szl encouraged his girls to write articles about chess, explaining, "If one writes an article, one considers a matter more deeply than without a goal, thinking alone or speaking with someone about it." The girls were also encouraged to come up with creative solutions to problems. Play, not merely in the sense of chess being a game but also in the sense of an unconstructed, goalless activity, was part of the teaching strategy. Coming up with interesting solutions and challenging the

girls to think of tricks and new insights allowed them to explore outside what could be offered by memorizing past results.

9. Experimentation

As the Polg r sisters eclipsed their father in chess ability, their impetus to continue mastering the game increasingly had to come from within themselves. Each of the girls had to cultivate her own unique style and approach. Judit chose to focus on tricks and tactics, writing that “opening preparation was not at all important at that time. This may be a reason why, even today, my strongest area remains the middlegame.”18 The girls’ varying choices show that chess, like any creative skill, involves not merely a mastery of patterns but also choices about what skills and styles to cultivate within a vast range of possibilities.

Finally, the Polg rs embodied the idea of ultralearning at its broadest, with L szl arguing, “In my opinion, we should disseminate the idea of intensive learning in every field.” The success of the Polg rs follows the same pattern as that of most of the ultralearners I have met: aggressive, enthusiastic selfeducation following the key principles of learning.

Fostering Ultralearning in the Home, School, and Workplace

How can you foster ultralearning as a parent or educator or in an organization? Is it possible to help others self-confidently tackle difficult learning projects of their own design? Can you teach students not just the material they need to study but how to learn on their own, so they will be self-sufficient outside the classroom? Can you lead the individuals in your organization to learn more aggressively, filling gaps in their competency and achieving their full potential? These are all intriguing questions to which we don’t yet have definitive answers.

In reading the scientific literature on learning and following up with the ultralearners’ stories, I was struck not only by how much is known about learning already but by how many open questions exist for which researchers and autodidacts are still hazarding hypotheses. The complications expand exponentially once you introduce the social environment as well. Now it’s no longer a question simply of individual cognition but of the emotions, culture, and relationships that start to influence learning in complex and unexpected ways. From this perspective, therefore, I’d like to cautiously suggest some starting points for fostering an environment that will support ultralearning, at home, in the school, or in the workplace. These suggestions aren’t rules, but they can be seen as starting points for enabling others to capture the ultralearning spirit.

Suggestion 1: Create an Inspiring Goal

Better yet, allow people to design their own learning goals that inspire them. Inspiration is an essential starting point in the process of ultralearning. There must be something very compelling for a person to summon up the energy and self-discipline needed to learn. Sometimes that is the promise of a new skill bringing career opportunities. Coding boot camps, which have sprung up in the wake of high-paying programming jobs, push students through at a brutal pace, sometimes approaching eighty hours a week. The goal, however, is compelling enough to justify this investment: complete a rigorous program over the course of a few weeks, and you can rise up the ladder of highsalaried tech jobs in Silicon Valley and elsewhere. The process is intense, but the motive is compelling.

In other cases, the motivation for ultralearning comes from an intrinsic

interest that becomes amplified. My own MIT Challenge started with feeling I had missed out by not studying computer science in school. Normally, that wouldn't have led to any large, structured effort to learn a lot of computer science. It was only when the idea of doing an entire degree in a shortened period of time, along with the research that made me think it might be possible, that my initial interest become a passionate commitment. Roger Craig, with his Jeopardy! exploits, was always interested in trivia competitions. It was only when he recognized that there might be a chance to appear on the famous television show that his interest became an obsession. Eric Barone took his love of a childhood video game and expanded it into an effort to create a better version. Seeking out people's natural interests for ultralearning means encouraging the sparks that already exist, rather than merely imposing on them the topics you feel would be most beneficial. Once people see the structure of an ultralearning project, they can start thinking for themselves what would be most interesting, exciting, and useful for them to work on. Tristan de Montebello started with the idea of ultralearning and only later chose to craft a public speaking project around it.

Suggestion 2: Be Careful with Competition

The Polg rs' example clearly indicates that early self-confidence can create an enthusiasm that leads to continued investment. You don't need to feel as though you're good at something to invest energy into learning. After all, becoming good at something is what learning is. However, you need to feel that you could be good at it. People tend to make their perceptions of inadequacy into immutable destinies: "I'm no good at math," "I can't draw anything but stick figures," "I don't have the language gene." Although there likely do exist real differences in innate ability, so that these pronouncements aren't completely false, they tend to ignore an important factor: motivation. When you see yourself as lacking the potential to be good at something or believe that you'll always be behind everyone else no matter how hard you work, it robs you of the motivation to work hard. Thus, although there are differences in ability among all of us, they can often be exacerbated by the affective dimension they create in how we feel about learning. Feel as though you're lousy at doing something, and you're robbed of the motivation to change.

The reference group you compare yourself to can have a powerful influence. I find it interesting that many, but not all, ultralearners aimed at projects that were so unusual that they made it hard to compare them to a normal reference group. De Montebello's public speaking competition certainly pitted himself against excellent public speakers. That might have created a feeling of inferiority, except that de Montebello could always explain to himself any perceived deficits as coming from trying such an ambitious project with so little prior experience. Had it been the case that instead of an individual ultralearning project, he had been pitted against a dozen other competitors with exactly the same prior experience, he might instead have rationalized any perceived inadequacy as his simply not being good enough. This suggests that the competitiveness of the project cuts both ways: When you have a natural talent and thus perform much better than the easily identifiable reference group, you'll have more motivation to practice and learn with intensity. However, if you come up short, it may rob you of the motivation to practice. The Polg rs used competition to their advantage. Because the girls' training started unusually young, they were always seen as precocious and the competitive environment enhanced their motivation. Had

they started late or been put into a school where they weren't guaranteed to be star performers, their motivation might have been sapped.

To me, such motivational effects, coming from implicit comparison to a reference group, suggest adopting a twofold approach. If a person in whom you want to encourage an ultralearning spirit has a natural aptitude, competition is probably good. Seeing him- or herself do well in direct comparison with others may encourage a commitment to further improvement. For a person who either is of moderate ability or is behind other people, such as learning a skill in a domain in which he or she has no experience, or who is starting to learn a new skill later in life, you should make an effort to make the project unique. This will encourage the person to frame his or her progress by comparing to his or her past self, not due to competition with others. Sometimes a project can start out being unique, thus sheltered from the harsh light of unfavorable comparison, and move to a more competitive environment once confidence has been established. For example, you might start learning programming by creating a game that is hard to compare to others but enter coding competitions as you begin to feel more competent.

Suggestion 3: Make Learning a Priority

Outside school, learning is usually seen as a by-product of doing a job, not the core goal. Though organizations often give lip service to ongoing training and education, it's usually in the form of workshops or seminars that one sits through passively before getting back to the real job at hand. Ultralearning, by encouraging direct, intensive practice, provides the opportunity for a kind of fusion project—one that accomplishes real objectives but is also designed to teach something new.

The normal protocol for assigning a project is to find the best person for the job and give them the task. A learning-driven approach would suggest instead that people who are not yet capable of doing the task might be assigned to the project. An ultralearning-driven work environment might consist of employees' spending a majority of their time on projects that are within or near their competency levels but devoting a specific fraction of their time to working on projects that are a leap above their current abilities. Although this is purely hypothetical, I imagine two benefits of this approach. First, it will create a culture of learning within an organization where people are always willing to try to solve problems they don't yet know how to solve, instead of expecting someone else to know the answer already. Second, it will help reveal talent by giving people challenges they can rise to. If mentorship opportunities and difficult projects are assigned only on a whim by managers, they will likely miss a lot of people who may have the ability to succeed in difficult positions but are never given the opportunity to do so.

At the highest levels, an ultralearning-driven culture also allows learning to go into areas where perhaps nobody else has a particular skill. Although going between established levels of skill is important, it is when one learns to do something that nobody else can do that learning becomes truly valuable.

Conclusion

In many ways, writing this book has been an ultralearning project. Although a writer researching for a book is hardly unique, not all ultralearning projects need to be one of a kind to matter to the person doing them. Sitting in my den at home are stacks of binders filled with thousands of pages of printed journal articles. My bookshelf now has dozens of obscure, out-of-print monographs on thin slices of the question of how people learn. Recordings of calls with

various researchers helped me realize how much nuance there is to even simple questions such as “Is feedback helpful?” and “Why do people forget?” I’ve poured over numerous biographies of famous intellectuals, entrepreneurs, and scientists to try to arrive at an understanding of how they approached learning. In many ways, the process of writing this book was a reflection of its subject—an ultralearning project to write a book about ultralearning. Although I had a strong interest in the subject of learning and had browsed textbooks, articles, and biographies before I began research into this book, it was only after I started this structured project that I really began to dig deep.

Beyond research, this book was a challenge for me as a writer. My writing experience comes from blogging, not authoring books. Striking the right tone in a book is hard, and it’s quite different from the casual daily missives in a blog. I knew from the start that I wanted to share the stories of others and their exploits, not just recount my own experiences. That was initially quite challenging. Most biographies and published stories don’t focus on learning methods. Even when learning is the central theme of the story, most biographers are satisfied to be in awe of talent, rather than dig into the specific details of how a person did a particular thing. My research efforts frequently involved scouring a five-hundred-page biography for the several paragraphs in which concrete details about learning methods were mentioned in passing. Although this created challenges, it also forced me to develop new skills as a writer. I had to improve my research and writing skills in ways that more than a decade of penning blog articles never had. Even the style of the book created a skill-challenging project for myself. I’ll leave it to you, the reader, to judge whether I was successful.

The metaproject of ultralearning to write a book about ultralearning also illustrates some important ideas. For one, although I’ve made enormous improvements in my writing ability and knowledge of cognitive science and stories of famous learning exploits, there is still far more to learn. Digging into the science, for instance, one can quickly develop a sense of vertigo standing atop the mountain of papers, theories, ideas, and experiments, all loosely connected to the topic of learning. Similarly, for every biography I read, there were hundreds I could not. For every ultralearning story I encountered, there were likely dozens more my searches didn’t reveal. It is a profound error to claim that learning is about replacing ignorance with understanding. Knowledge expands, but so does ignorance, as with a greater understanding of a subject also comes a greater appreciation for all the questions that remain unanswered.

In the face of this, one must simultaneously have confidence and deep humility. Without the belief that progress in one’s own knowledge and skill is possible, one cannot undertake the project required to generate it. This kind of confidence may be mistaken for arrogance by outsiders, as it can seem that an effort to learn something quickly and intensely is somehow an assertion that the subject is trivial or that, having learned something, one has learned everything. Instead, this confidence must be paired with deep humility. In every project I’ve undertaken, including this one, my thoughts upon concluding it were not to think I had finished but to suddenly become aware of how much further I could have gone. Before I started my MIT Challenge, I imagined that covering an undergraduate degree’s worth of computer science concepts would be plenty. After I had finished, I could see how each topic I had learned could be multiplied into a doctorate’s worth of research or a

lifetime spent coding to fully understand it. My experience in learning languages to a level where I could hold conversations made me realize how many more words, expressions, nuances of culture, and difficult communication situations were left to explore. Finishing a project, therefore, isn't usually accompanied by a sense of finishing learning but by the creation of a feeling of possibility as one's eyes are opened to all the things left to learn.

It's this aspect of learning that I find most interesting. Many pursuits in life have a kind of saturation point, after which the longing for more of a thing eventually diminishes as you get more of it. A hungry person can eat only so much food. A lonely person can have only so much companionship. Curiosity doesn't work this way. The more one learns, the greater the craving to learn more. The better one gets, the more one recognizes how much better one could become. If you finish reading this book and have been encouraged to try your own project, this would be my greatest hope—not that you'd be successful at your project but that your ending would be a beginning. That by opening a small crack in all the possibly knowable things there are in the world, you might peer through and find there is far, far more than you had ever imagined.

Step 194-How To Become Straight A Student

Efficiency. The simple truth is that the brute force techniques used by most students are incredibly inefficient. When it comes to exam preparation, passive review is not an effective way to learn complicated concepts. It's also mentally draining, which further diminishes the rate at which you can absorb and internalize information. For paper writing, this same problem holds. When you approach the task without proper preparation, it becomes incredibly tiring and you can end up spinning your wheels. After a while, even the formation of coherent sentences becomes difficult and time intensive. In contrast, the techniques I came up with were so streamlined that I could learn more material than my classmates and actually spend less time studying. By eliminating stupid habits and wasted effort, I transformed exam prep and paper writing from a dreaded chore to a targeted activity. You will learn how to:

- Manage your time and deal with the urge to procrastinate.
- Take targeted notes in class.
- Handle reading assignments and problem sets with ease.
- Prepare efficiently for exams.
- Master the art of exam-taking.
- Write incisive critical analysis essays.
- Conduct thorough research.
- Write standout term papers.

A big part of the solution is timing—they gain efficiency by compressing work into focused bursts. To understand the power of this approach, consider the following simple formula:
work accomplished = time spent x intensity of focus

With this formula in mind, you can begin to understand why many straight-A students actually study less than their classmates: They replace long, low-intensity stretches of work with a small number of short, high intensity sessions. Of course, this is not the whole story behind their success; what straight-A students actually do in these short bursts is also crucial—technique is just as important as timing. Part Two (Quizzes and Exams) and Part Three (Essays and Papers) of this book are dedicated to these technical details. But learning how to follow an efficient schedule, and banishing pseudo-work from your college experience for good, is a crucial first step toward your academic overhaul.

Quizzes vs. Exams

If the test is worth less than 15 percent of your final grade, it's a quiz; otherwise, it's an exam. If the test is worth only 5 percent or less of your grade, designate this a tiny quiz. Don't spend too much time on tiny quizzes. Even if you fail one, it still probably won't change your final letter grade. And if you're attending classes and keeping up with your reading, you should be able to score above average with little to no preparation.

Step 1

Take Smart Notes

Gather the Right Materials When I was a freshman, less than half of my class brought a laptop to campus. The year I graduated, over 95 percent of incoming freshmen brought laptops. By the time you read this, laptops will more or less be the de facto standard for undergraduates across the country, and this is a great advancement for the cause of collegiate note-taking. Why? I think David, another Dartmouth student, put it best: "Use your laptop. Seriously! You will be overwhelmed by the quality and legibility of your notes… it's really a no-brainer."

Take Smart Notes in Nontechnical
Courses (What's the Big Idea?)

The key to doing well in these courses is straightforward: Identify the big ideas. That's what it all comes down to. Exams in nontechnical courses focus entirely on big ideas—they require you to explain them, contrast them, and reevaluate them in the light of new evidence. If you are aware of, and understand, all of the big ideas presented in the course, these tasks are not so difficult, and strong grades will follow. As you would expect, lectures are a major source of these big ideas. Identifying them, however, is not a trivial task.

Professors ramble. And they rarely start a class by clearly identifying the big ideas that will be explored. Instead, they tend to dive right in, leaving the poor student to separate on his own the interesting conclusions from the digressions.

Format Your Notes Aggressively

When it comes to formatting the text itself, the basic rule to follow is that anything that makes the information easier to read is fair game. You don't need a consistent scheme. Don't be afraid to use aggressive text formatting to help emphasize important points. On a computer, smart students often make use of bold fonts and lists to help organize their thoughts. Capture Big Ideas by Using the Question/Evidence/Conclusion Structure Keep in mind that professors don't always state the question. Often they jump right into the evidence and leave it to you to deduce the question being discussed. Don't be afraid to jot down "QUESTION:" and then leave the rest of the line blank as you begin recording evidence. Once you figure out what the professor's talking about, you can go back and fill in this blank.

The same holds true for conclusions. Professors will sometimes hint at a conclusion but not come right out and present a neat endpoint for the current discussion. In this case, it will be up to you to synthesize the question, evidence, and professor's hints into a conclusion of your own. This is the important part. When you formulate a conclusion, you are cementing a big idea. If you can't finalize a conclusion before the professor moves on to the next question, simply jot down "CONCLUSION:" and plan to come back later during a lull in the lecture, or immediately following class, to fill in the blank.

Step 2

Demote Your Assignments

Work Constantly

Most college students depend on “day-before” assignment planning, meaning they never start an assignment until the day before it’s due. This might be the simplest scheduling decision, but it creates many problems. Large assignments will quickly transform from potentially interesting to tedious to painful when tackled in one monolithic, last-minute chunk of time. And, if two or more assignments happen to be due on the same day (which will happen often), you will be forced into a frenzied work marathon that will produce lackluster results at best. Smart students Smart students avoid these issues by working constantly on assignments, in small chunks, every day. “I try to sit down every Sunday night and plan out the week,” explains Simon, a straight-A student from Brown. “My goal is to make sure that I don’t have too much work on busy days and that I do at least a little bit each day.” For example, if you have a problem set due every week, complete one problem a day, one hour at a time. Don’t spend five hours the night before. The same goes for reading assignments—knock off a chapter a day, and you’ll never find yourself spending a lonely night with a textbook and a six-pack of Red Bull.

Bear in mind that even if you get caught up on all of your assignments for a given class, you should continue to work. For example, if it’s Sunday morning and you have already finished your reading for Monday’s history class, and you have time to spare, break out a book and do a little of the reading for Wednesday’s history class. This doesn’t mean that you should study like crazy twenty-four hours a day. Don’t stay up until 2 A.M. Sunday night trying to finish the entire week’s load. But on days where you happen to be ahead of schedule, and you have already put aside time to work on a certain class, take advantage of this fortuitous situation to get ahead. Once you get used to working a little bit every day, you’ll be surprised by how often this situation might arise.

Don’t Read Everything

For example, in most college courses there are one or two sources that show up on the reading list for almost every lecture. We will call these favored sources— they’re usually a textbook or a course reader, and they provide the basic structure for the course by outlining key facts and arguments in a condensed form. Always read the assignments from favored sources.

Professors usually augment these favored sources with a variety of supplemental readings that provide context or analyze certain arguments and events in more detail. These supplemental readings are often academic papers, transcripts of speeches, or chapters from books —and they are typically fascinating. But they are also typically expendable, and you should not plan on reading them all. Instead, if your time is limited during a particular week, then your strategy should be to select only the most important supplemental readings for review. So how do you decide which supplemental readings to review, which to skim, and which to skip? Straight-A students follow this simple hierarchy: Readings that make an argument are more important than readings that describe an event or person, which are more important than readings that only provide context (i.e., speech transcripts, press clippings).

Confirming Your Decisions

You should always use the lecture itself to confirm your choice about what to read and what to skip. If the professor emphasizes the importance of a work that you dismissed (which will happen occasionally—this system isn't perfect), then make a note that you will need to go back and cover this reading in more detail before the next exam. A smart technique is to simply write these skipped readings right onto your syllabus as an assignment for a later class. Choose a day with a light reading load, and treat the assignment as if it was given to you by your professor. If you don't explicitly schedule a time to cover this material, you will invariably procrastinate and then find yourself with a huge reading list to cover right before the exam.

Take Smart Notes on Your Favored

Reading Assignments

We've discussed which readings to ignore or skim. But the logical next question is what to do with the favored sources that you decide to read carefully. In this situation, how you take notes on the reading makes a big difference. If you write down very little, the assignment can be completed fast, but the time will be wasted because you won't have bothered to extract the big ideas in a way that makes them accessible when it comes time to study. If, on the other hand, you take detailed notes on every paragraph, your assignments will take way too long to complete. The best compromise is to use a strategy similar to the one outlined earlier for taking lecture notes. To refresh your memory, the core of this strategy is that all big ideas can be reduced to a question, evidence, and conclusion. This approach can work wonderfully for reading assignments as well. Apply it as follows:

First, as with lectures, try to take notes on your computer. They will be more organized and easier to computer. They will be more organized and easier to follow later on, when you use them for review. In addition, typing makes it easier to record more and finish faster. Next, carefully read the beginning of the assignment. Look for the question being answered by the author. Note that this is different than a thesis statement. For example, "Why did the Clinton health care plan fail?" is a question. "The Clinton health care plan failed because of resistance from commercial health care providers" is a thesis. In a reading assignment, the question can usually be found in the title or perhaps explained in the first few sentences. Record this in your notes, and label it clearly. Next, look for the

author’s conclusion (the thesis statement). This is perhaps the most difficult part, since academics are known to propose complicated answers to their questions, especially when writing. So it may take some serious consideration to figure out what’s being suggested. Search the first few paragraphs; this is typically where the conclusion is hidden. Also check the final few paragraphs. Often a thesis is proposed at the beginning of an article but then refined slightly at the end once all of the supporting evidence has been presented. When you feel confident in your understanding of the conclusion, record it carefully in your notes. Don’t worry if it takes several sentences to capture the point—err on the side of being thorough. Now comes the easy part: Skim the entire reading. Now comes the easy part: Skim the entire reading. Don’t take notes yet. Instead, use a pencil to make checkmarks next to important paragraphs that jump out at you. Because you are reading fast, you may miss some points—don’t worry. “Just get the gist of the author’s message and how he is supporting that message with evidence, then move on,” explains Jason, a straight-A student from the University of Pennsylvania. You don’t need to capture everything. Your goal is simply to mark a few solid examples that justify the conclusion as the answer to the question.Once you have skimmed through the entire reading, go back and find your check marks. For each mark, record in your notes a concise summary of the corresponding point. Label each point in your notes with the page number where you found it. This shouldn’t take long. Don’t worry about being formal or grammatically correct. Just dump these pieces of evidence into your notes. When you’re done, your notes should contain a clearly labeled question followed by a half-dozen or so bullet-pointed pieces of evidence, then a clearly labeled conclusion.

Don’t Work Alone on Problem Sets

Perhaps the most important rule for taming the problem sets assigned in technical courses is to follow our earlier rule and work on them constantly. As Ryan, a straight-A student from Dartmouth, explains: “You can work on problem sets in small pieces while you’re between classes or activities.” Concentrating on only one or two problems a day will help you avoid mental fatigue. Once your brain gets tired, it’s easy to stall—but if you spread out your work, you will end up spending fewer hours on the assignment than if you tried to do it all at once.

Even with a smart schedule, however, you will probably still get stuck occasionally. When this happens, use all the available resources to help you get unstuck. If you’re allowed to collaborate with your classmates, which is often the case in technical courses, definitely take advantage of this opportunity. As Greta from Dartmouth explains, working in groups “can drastically cut the time required to finish a really hard problem set.” Identify one or two students who share a similar skill level Identify one or two students who share a similar skill level as you and then construct a regular schedule for working together on the class assignments. Set your meeting dates for two or three days before the deadlines; this gives you time to first try the problems on your own and identify the ones that give you the most trouble. Then, when you meet with your problem set group, your energy will be focused where it’s needed most. However, don’t meet the day before your deadline. It’s important to have at least one day before handing in the assignment so you can review all of your answers and fix any small mistakes. You should also take advantage of office hours. Most technical courses hold office hours once a week, usually run by a teaching assistant (TA). These meetings are meant to clarify complicated concepts from class and to be a source of help on hard problems. Always go to office hours, if you have time, and arrive knowing which homework problems pose the biggest challenge to you. Don’t be afraid to ask for help. You will learn a lot during these weekly sessions, since the TAs will be able to walk you through the more difficult concepts—which will ultimately save you a lot of time and frustration.

Solve Problems on the Go

First, set aside a little block of time to familiarize yourself with a couple of problems, and make sure you understand exactly what is being asked. You may need to review your notes to refamiliarize yourself with the relevant concepts. Next, try to solve the problem in the most obvious way possible. This, of course, probably won't work, because most difficult problems are tricky by nature. By failing in this initial approach, however, you will have at least this initial approach, however, you will have at least identified what makes this problem hard. Now you are ready to try to come up with a real solution. The next step is counterintuitive. After you've primed the problem, put away your notes and move on to something else. Instead of trying to force a solution, think about the problem in between other activities. As you walk across campus, wait in line at the dining hall, or take a shower, bring up the problem in your head and start thinking through solutions. You might even want to go on a quiet hike or long car ride dedicated entirely to mulling over the question at hand.

Write Solutions Right the First Time

Another important time-saving tip for problem set work is to record solutions formally the first time you write them down. Many students first jot down their answers informally and then return later to reformat them into something neat enough for submission. There is no reason to include both steps. You are, for no good reason, adding a lot of extra time to the process. Instead, go slowly and deliberately the first time. Write your answer carefully, and clean it up immediately until it is of submission quality. Then you can cross the assignment off your list and it will be one less thing to worry about.

Step 3

Marshal Your Resources

Smart students understand that if you're studying hard, then you've done something wrong. Preparing for a test should not be painful. And it should not require a lot of time. If you have been putting Steps #1 and #2 into practice, taking smart notes and handling assignments effectively, studying should not be a big deal for you either. In fact, when faced with a looming quiz or exam, you have to do only two things. First, organize your material intelligently. Second, perform a targeted review of this material. This section will teach you how to accomplish the former. Don't worry—organizing your material properly is not a difficult task, but it is important that you do it right. Many students neglect this step, eager to dive right into the review, but by doing so they condemn themselves to hours of unnecessary work. You don't want to be like these students. Pay attention to the advice that follows and you will experience a significant reduction to the difficulty of your study experience.

Define the Challenge

Before you can conduct any meaningful studying, you must first define the scope of the exam. As Simon from Brown puts it: "You need to know what kind of information the professor wants you to know." To accomplish this goal, answer the following questions:

- Which lectures and reading assignments (or problem sets) are fair game?
- What type of questions will there be, and how many of each? As Christine from Harvard explains: "It's helpful to know in advance what kind of knowledge will be asked for on the exam—IDs, dates, broad syntheses of the texts' major arguments?"
- Is the exam open note or open book?
- For a technical class, will formulas be provided or do they need to be memorized?
- How much time will be available? Does the professor expect the exam to be easy to complete during the test period or a challenge?

Some professors offer answers to these questions without being prompted. Many, however, do not. If it's two weeks before the exam, and the professor hasn't mentioned any details yet, you should ask. If you're shy, ask after class. But get the information as early as possible—it's crucial to your success. Build a Study Guide (Organizing Nontechnical Course Material) "I have always been a big fan of making a study guide," admits Ryan from Dartmouth. This is a technique that popped up again and again in my

straight-A interviews. Each student, of course, had his or her own variation on study guide creation, but they all followed, more or less, this same general approach:

For a nontechnical course, once you find out which lectures and reading assignments are fair game for the exam, print out the corresponding notes that you've typed up or gather the pages you've written on (don't be afraid to deconstruct your notebook). Cluster these pages into piles, separated by general topic. Clearly label each of these piles with its topic and fasten them together with a paper clip so you can easily transport them without mixing up the pages. This final step is important, since you will be moving to and from your various isolated study spaces once you begin your review. For simplicity, we will refer to these topic-themed piles as "chapters." Your final study guide, therefore, should contain a chapter, consisting of reading and lecture notes, for each general topic that might be covered on the exam.

Construct a Mega-Problem Set
(Organizing Technical Course Material)

For a technical course, many students follow a variant of the study guide approach that focuses on sample problems. It works as follows: Your problem set assignments are the key to your review process. Start a pile for each problem set that covers material that might appear on the exam. Next, you'll need to supplement each problem set with sample problems from your lecture notes. For each lecture relevant to the upcoming exam, do the following:

1. Match the lecture to the problem set that covers the same material.
2. Copy sample problems from these lecture notes onto a blank sheet of paper. You don't have to copy the steps or the answers, just the questions.
3. Label the blank sheet of paper with the date of the lecture. This will help you later figure out where these problems came from (and more important, where their answers can be found).
4. Fasten this sheet with a paper clip to the problem set you matched it to in step one. In other words, this process transforms your problem sets into mega-problem sets by adding extra problems drawn from your lecture notes. Pretty simple.

Finally, you must augment your mega-problem sets with technical explanation questions. What are these?

For every major topic covered in a particular megaproblem set, jot down a question that asks you to explain the basics of the topic. For example, as Greta from Dartmouth recounts, in an “economics course, I would make study sheets and then add a general question such as: what happens when a government increases spending and lowers interest rates?” Or, for a chemistry class, you might have a problem set containing many questions that require you to draw the molecular structure of specific chemical compounds. In this case, you could add a technical explanation question along the lines of: “Explain the general procedure for drawing a molecular structure, why this is useful, and what special cases must be kept in mind.” It’s important that you add these technical explanation questions in addition to your regular sample problems, since they will reveal whether or not you understand the underlying concepts or if you’ve just memorized the steps for some particular problems. One last note: If your professor makes a practice exam available, then print out a copy of it and store it with your mega-problem sets. For technical courses, sample exams are a great review tool, and you will definitely want to have them handy when it comes time to study.

Prepare Memorization Aids

Both technical and nontechnical courses sometimes require you to do some memorization —formulas, chemical equations, artwork, dates, or chronologies— and the most efficient way to memorize this information is by using flash cards. Almost every straight-A student interviewed for this book used flash cards to help with rote memorization. Fortunately, this technique is easy. Buy a stack of index cards, put the prompt on one side and the answer on the other. Constructing these flash cards, however, can take longer than you might imagine, so start early. If possible, start writing up your cards at least a week before the first day you plan to actually study. The activity is mindless—you can write flash cards while w atching TV—so it shouldn’t be too hard to get them done, in advance, bit by bit.

Schedule Your Organization Wisely

Don’t try to organize and study in the same day. This is a crucial tactic used by many straight-A students. When you review, you want your brain at full power. If you organize your materials the same day that you review them, your brain will be too tired to accomplish both effectively. So keep these two tasks separate and you’ll end up working more effectively, which reduces the total time spent and produces better results.

Step 4 Conquer the Material

This is the step students most commonly identify with exam preparation. It's also the step that most students misguidedly spend the majority of their time on. You're not most students—at least not anymore. All of the work you put in up to this point was meant to make this one step as small and painless and insignificant as possible. So don't worry. There are no all-nighters in your future. What follows are powerful techniques for taking your imposing piles of study material and imprinting the key ideas on your mind as efficiently as possible. These techniques are quick but ruthlessly effective. Use them with confidence. They get the job done, and they get it done fast.

USE Feynman Technique

Feynman Technique

I. **Choose a Concept, Idea, topic to Learn. Select a Topic You are interested in learning about and write it at the top of the blank page in the Notebook or Paper.**
    A. Choose your topics carefully: Not everything that you study suits this technique. Usually abstract complex ideas are best understood by Feynman technique but ideas that are evidence-based/observational might not really be suited for this.
    B. Selecting a concept to study compels you to be intentional about what you don't know. It also forces you to choose a topic that's small enough that it could reasonably fit onto one or several pages.
    C. **You face what you don't know**. By writing a topic down on a blank page, you acknowledge you're starting from scratch or at least filling in some blanks. In doing so, take the initial step in the process.
    D. **You need to be specific**. Given the accumulated knowledge in the universe, most of us know nothing about most things! Writing down explicitly what you don't know provides you with a starting point.

II. **Use It For Real.**
    A. Use it for real: perfectly suitable for weekly tech-talks, lectures, paper-reading, Study, Bible Study, Sermon or any type of study, deep work and deep study sessions.

III. Study The Topic By Reading, Listening, Watching and Communicating.

A. You have to start small. You really only have a page (or a few) to fill up with information. You can’t fit everything there is to know about “Evolutionary Science” or “Microeconomics” or “Psychology” on a page. Instead work on smaller more defined concepts or what might reliably be found on a midterm or final exam.

B. Fully understand the complex topic first: Don't begin the learning process by explaining it before you actually understand it. Retention methods such as Feynman technique, active-recall and spaced repetition are for solidifying information that you already understand. Trying to solidify an information before you understand it might end up encoding wrong interpretation of a topic.

C. Actually put the time and effort: Once you have selected the correct set of topics, make sure you actually spend the time and effort to go through the entirety of the techniques. Feynman technique is great for having a basic framework of the topic inside your head with the details chopped off. It's important to get a very clear picture of the basics in your head right - the details can be filled in later.

D. Make it your own.
   - Start with not knowing.
   - Ask 'why?'. ask why x=y. or why does music has 12 notes and not 14.
   - Study the story of what you are studying. E.g. study what was physics before Quantum theory. Why QT was needed, who were the people involved in developing the QT and how it changed the world.

E. Take Notes On the Topic From Study.

F. Consolidate the information concisely onto a flashcard or some other place for long term retention: Once we really understand a topic to be able to explain the core principles without having to use jargon, we should hold onto that understanding. Unfortunately, a large portion of that information that we just gathered is lost within first 48 hours after learning. So note it down somewhere before you lose it. Optimise for spaced-repetition for next sessions.

G. Don't write notes on notes: Life is short.

H. Cornell Notes.
   - How Will I Take Notes and Cornell Note Take Method Pages 79-82.

IV. Simplify The Topic For Myself First.

A. Simplify your explanation so that YOU understand it. As long as the explanation is not simple enough for YOU to understand, spend more hours to break it down to basic, bare-bone, core ideas.

B. Avoid jargon and complexity. The simpler the explanation, the more likely you are to remember it.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle, where it doesn't quite make sense, where you get frustrated, where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

V. Reflect, Refine, and Simplify

A. Only when you can explain the subject in simple terms do you understand it.
B. Simple is beautiful.
C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.
D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.
E. Go back to the source material, reviewing the parts you don't quite understand yet.
F. Repeat until you have a simple explanation.

VI. **Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge.**

A. **Step 1- Use The Chosen Rules of Reading Method For Analysis, Syntopicon, Research, Investigative Journalism or Mixed Method and Follow Each Steps Of The Method Until Finish All Steps, While Re-listen Lectures, Read Books or Lecture Notes 1-100 Times For Each Step.**

B. **Step 2- Following Rules of Reading Methods:**

C. **Skimming:**

I. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

D. **Entertainment**

I. **Method 1-Speed Reading. Pages 58-63.**

E. **Methods for Basic Knowledge For Deep Work or Bible Study.**

I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**
III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
VI. **Method 6-Devotional Bible Read. Pages 72-73.**

F. **Bible Study.**

I. **Method 1-Chapter Summary Method of Bible Study. Pages 141-145.**
II. **Method 2-Character Quality Method of Bible Study. Pages 146-158.**
III. **Method 3-Thematic Method of Bible Study. Pages 159-161.**
IV. **Method 4-Biographical Method of Bible Study. Pages 162-174.**
V. **Method 5-Topical Method of Bible Study. Pages 175-178.**
VI. **Method 6-Word Study Method of Bible Study. Pages 179-187.**
VII. **Method 7-Book Background Method of Bible Study. Pages 188-192.**
VIII. **Method 8-Book Survey Method of Bible Study. Pages 193-203.**

IX. **Method 9-Chapter Analysis Method of Bible Study. Pages 204-213.**
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XI. **Method 11-Verse by Verse Analysis Method. Pages 228-232.**
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XIII. **Method 13-Theological Study Method of Bible Study. Pages 237-243.**
XIV. **Method 14-Studying Bible Prophecy. Pages 244-257.**
XV. **Method 15-Typological Study Method. Pages 258-260.**
XVI. **Method 16- John MacArthur Way Bible Study. Pages 261-266.**
XVII. **Method 17-Inductive Bible Study Method. Pages 267-294.**
XVIII. **Method 18-BIBLICAL HERMENEUTICS. Pages 295-300.**
XIX. **Method 19-Theological Group of Principles. Pages 301-304.**
XX. **Method 20- How To Read A Book Pages 305.**

G. **Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.**
   I. **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 338.**
   II. **Method 22-How To Read A Book For Various Books. Pages 339-597.**
   III. **Method 23- Syntopicon Pages 598-639.**
   IV. **Method 24-The Craft of Research. Pages 640-879.**
   V. **Method 25-Research Books can Be Used. Pages 880-895.**
   VI. **Method 26-Investigative Journalism. Pages 896-922.**
   VII. **Method 27-Mixed Methods of Rules of Reading. Pages 923-941.**

A. Learning should be iterative. More often than not, learning something challenging takes several attempts. With the Feynman Technique, returning to the source material is an explicit part of the learning process. When gaps in our knowledge arise and our explanations aren't quite right, revisiting our primary and secondary sources can help solidify what we're learning.
B. Getting it right will likely take several iterations. That's a good thing; the more you refine your explanations, the more your understanding will deepen. Learning becomes an iterative process. Rather than viewing learning as one-and-done, this step gives you permission to continuously refresh your knowledge.
C. You're actively engaged. Using sources to polish our own explanations and models is an active process. When we learn passively, committing details to memory is more challenging. When we're actively part of creating our own summaries and reasoning, drawing intentionally from original information to fill our blind spots, we can more readily commit knowledge to our long-term memory.
D. You expand your knowledge base. Paradoxically, the more we learn, the more *our capacity* to learn increases. Looking through a chapter of a textbook might feel like a different language the first time around. The second time it becomes more clear. The third time, with a strong base already, we pick up nuances we couldn't have possibly seen before.

VIII. Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive.

A. Every field of study has its own specialised terms. While it may be important to know them, it's also important to not confuse knowing jargon with knowing concepts. The Feynman Technique involves simplifying our initial explanations and refining our understanding through simple analogies..Why this step works:

B. Simplicity is a proxy for understanding. It's easy enough to commit terms to memory, and repeat them back when prompted. But memorisation is not understanding. When we can't rely on big words that make us sound smart, we have to distill what we truly know to the most basic form. This is where true understanding takes place.

C. Analogies are easier to recall and explain. When you understand a challenging concept, analogies allow you to create a short-hand for recalling it quickly and explaining it to others clearly. Learning material often provides ready-made analogies for us. For example, we all probably have "the mitochondria are the powerhouse of the cell" burned into our collective memories. However, pushing ourselves to create our own analogies is even more powerful than regurgitating a borrowed one that we may not actually understand.

IX. Teach it to yourself or someone else. Write everything you know about a topic out as if you were explaining it to yourself. Alternately, actually teach it to someone else.

A. Classic learning mistake is reading an article or textbook and considering our learning complete. In reality, reading is not understanding. We might even take notes, essentially transcribing a resource's sentences into our notebooks. We often nod to ourselves, thinking we've grasped a subject. After all, *we've taken notes*.

B. Remove any jargon or complexity.

C. Only Use Simple Words. The words a child would understand.

D. Anyone can make a subject complicated but only someone who understands can make it simple.Jargon hides our lack of understanding. When forced to write out an idea from start to finish in simple language, you discover where you struggle … where it doesn't quite make sense … where you get frustrated … where you don't really understand as well as you thought. Only by identifying gaps in your knowledge can you fill them.

E. But true understanding requires a more active process like *teaching*. Start out by formally teaching yourself. Write out a summary in your own words without looking at your notes. Or explain it to yourself out loud. Then take it to the next level by teaching other people. Teaching also initiates a feedback loop, where critique or questions can help us learn and sharpen our thinking.

F. **It makes it harder to trick yourself**. When you have to truly explain something, whether through writing or aloud, you encounter the holes in your reasoning and the white spaces in your knowledge. Think of writing and teaching as a process to *obtain understanding*, not something you do once you already understand.

G. **It's even harder to trick others.** If an explanation you're providing doesn't make sense, they'll often tell you or you can pick up cues like blank stares. As a test, ask them to repeat what you taught them in their own words. If they can't do this, your explanation is too complex — simplify it and use plain language.

H. **You build confidence**. When you truly understand something, it clicks. You can explain it forward and backwards, pointing out exceptions and spotting logical inconsistencies. When this happens, it builds confidence and pushes

you to tackle even more challenging subjects knowing you have a solid framework for learning.

X. Reflect, Refine, and Simplify.

A. Only when you can explain the subject in simple terms do you understand it.

B. Simple is beautiful.

C. Review your notes to make sure you didn't mistakenly borrow any jargon or gloss over anything complicated.

D. Read it out loud as if to a child. If the explanation isn't simple enough or sounds confusing, that's a good indication that you need to reflect and refine.

E. Go back to the source material, reviewing the parts you don't quite understand yet.

F. Repeat until you have a simple explanation.

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IX. Organize and Review

A. To test your understanding in the real world, run it by someone else. How effective was your explanation? What questions did they ask? What parts did they get confused about?

B. When you're happy with your understanding, take the page you created with a simple explanation and put it into a binder. Following this technique for everything you learn gives you a binder full of learning that you can review a couple of times a year.

Trust the Quiz-and-Recall Method

Whether it's philosophy or calculus, the most effective way to imprint a concept is to first review it and then try to explain it, unaided, in your own words. If you can close your eyes and articulate an argument from scratch, or stare at a blank sheet of paper and reproduce a solution without a mistake, then you have fully imprinted that concept. It's not going anywhere. The same is not true if you merely read over something. Passively reviewing a concept is not the same as actively producing it. Most students make the mistake of relying only on passive review; they read and reread their notes and assignments, and assume that the more they read, the more they will remember. But as Ryan from Dartmouth warns: "Simply reading it over doesn't work. You have to make the extra effort to get it into your head."

Using the Quiz-and-Recall Method for Nontechnical Courses

To apply the quiz-and-recall method to nontechnical course material, you first need to construct a practice quiz for each chapter in your study guide. Fortunately, the questions for these quizzes already exist, since, if you've followed the advice of Steps #1 and #2, all of your notes should be in a question/evidence/conclusion format.

Therefore, the quiz for any given chapter can simply contain all of the questions from the notes you took for that chapter. You can be flexible here. If your notes contain some really broad questions—for example, an entire lecture that deals with only one idea—break them up into several smaller questions that, together, cover all of the relevant points. On the other hand, if your notes have a bunch of really small questions, you can combine some into larger questions to save space and time. This process is not an exact science; your goal is simply to produce practice quizzes that cover all the material contained in each corresponding chapter. If you can answer all the questions, then you understand all the big ideas. Once you've built your practice quizzes, go through them one by one. For each question, try to articulate the matching conclusion and provide some highlights from the supporting evidence. You don't have to reproduce the material in your notes word for word, but you do need a reasonable summary of the big idea and its support. Here's the important part: Don't do this only in your head! If you're in a private location, say your answers out loud using complete sentences.

However, if you are forced to review with other people around and you need to be quiet, then you can write out your answers. “The physical act of writing and the manipulation of the material in my mind was usually enough to keep things straight,” explains Melanie, a straight-A Dartmouth student. You don’t have to format these responses perfectly with correct spelling and grammar, but they must contain all of the pertinent information. No shortcuts. If you don’t say or write it, don’t consider it fully reviewed. Next, put little check marks on your quizzes next to any questions that you had trouble answering. Glance through your study guide to remind yourself of the right answers to these questions. Take a quick break.

Now, repeat the first step, except this time you need to answer only the questions that you marked during your first run-through. Put a new check mark next to the questions that you still have trouble with. Once again, look through your notes to get the right answers, and then take a quick break. Then go back to the practice quiz and try to answer the questions that you marked on your second run-through. You get the idea. Repeat this pattern until you complete a run-through without adding any new check marks. At this point, you’re done!

Using the Quiz-and-Recall Method for Technical Courses

The quiz-and-recall method is easily applied to technical courses. You already constructed your mega-problem sets; now you simply need to solve them. Start with the technical explanation questions—thinking about the general concepts first will make it easier to solve the specific sample problems that follow. As with nontechnical courses, try to provide an articulate answer for each problem, and if possible, give your explanation out loud, as if lecturing to a class. Otherwise, write out your answers clearly. Don't skip any important details. Once you're done with the technical explanation questions, move on to the sample problems. Try to answer each. Again, don't do this in your head. "I don't just read the material," explains Worasom, a straight-A student from Brown. "I write the important equations and concepts out by hand." Your solutions don't need to be as detailed as if this was a real assignment, but they should clearly demonstrate that you know what you're doing. If you can't explain exactly how you got from the question to the answer, then you don't yet understand this problem. Be honest with yourself: If you're just regurgitating memorized solutions, you aren't prepared to handle new questions on a test.

Memorize over Time

If you have material that must be truly memorized— dates, artists, chronologies, formulas —there are, unfortunately, no real shortcuts. You just have to keep working with your flash cards until you have no trouble providing the right answer, even after you shuffle the cards into a random order.

Memorization is particularly dependent on your available mental energy. It doesn't work if you try to commit items to memory for eight hours straight, but it does work if you memorize only an hour at a time and only one or two hours a day. So separate the task of memorizing from your other review. Spread the work out over many days, and never dedicate too much time to any one sitting with your flash cards. Melanie from Dartmouth recalls how some of her peers would "review their flash cards at any opportunity—eating dinner, waiting in line at an e-mail terminal," which is the most effective way to get through this tedious task and commit the necessary items to memory.

Step 5 Invest in "Academic Disaster Insurance"

Straight-A students have a knack for avoiding rogue questions. It's as if they invest in some sort of academic disaster insurance: protection against the unexpected return of those obscure topics that slip by when you doze off for a moment in class. In reality, this insurance policy is nothing more than a simple strategy: Eliminate your question marks. This technique can be employed throughout the term and, over time, significantly reduce the chance that you will be baffled by an unexpected exam question.

Eliminate Your Question Marks

In Step #1, we covered smart techniques for taking notes in class. If you remember, this strategy suggests that you put a question mark in your notes for any topic that flies by without you really understanding the conclusion. This will occur occasionally in both technical and nontechnical courses—sometimes as the result of your attention wandering and sometimes as the result of the professor heading off on a tangent and not offering a satisfactory explanation.

These question marks are dangerous. As Christine from Harvard puts it, by skipping a point made in a lecture, "you're gambling with the possibility of being truly in the dark on the exam." The scenario is simple. During the semester a few topics slip past your attention in class, so you end up with a handful of question marks in your notes. When it comes time to study, you have more than enough big ideas that you do understand, and that you need to review, so the occasional question-marked topic gets ignored. You enter the exam feeling prepared, and then, as luck would have it, you find yourself face-toface with a big essay question covering one of those bypassed concepts. Whoops. To prevent this from happening, you need to eliminate these question marks. The key is to start this process well before the exam. If you leave all of these question marks unanswered until you start studying, you will end up spending many extra hours looking up the required explanations. Learning a large quantity of material from scratch during the review process is a mistake made by average students—and you should avoid this. Instead, try to knock off question marks as soon as they arrive. By the time you begin studying you should, as

Robert, a straight-A student from Brown, explains, “have at least a vague understanding of every topic that will be covered on the exam.” The following four tactics, if used regularly, will help you achieve this goal. They provide a solid defense against unclear ideas and will allow you to start the study process with an explanation in mind for all relevant topics.

- Ask questions during class. “When in doubt, I just ask questions in class for more clarification,” explains Worasom from Brown. If a topic slides by you, raise your hand and ask for a clarification. The more question marks you eliminate on the spot, the less work you will have to do later.
- Develop the habit of talking to your professor briefly after class. “Talk to the professor after class, or send him an email asking for clarification about questions that arose during his lecture,” suggests Jason from Penn. There is nothing unusual about this. Most professors will stick around for five or ten minutes after the bell to answer final questions. Take advantage of this time. When the class ends, head over to the professor and see how many of the question marks of the day you can get eliminated. You should then immediately correct your notes before you forget the explanations. Will this turn you into a brown noser? No! The brownn osers are those who come up to the professor only to tell him what parts of the lecture they found interesting, or to offer up some of their own “brilliant” thoughts on the topic. You, on the other hand, have a list of focused You, on the other hand, have a list of focused questions that you want answered, which makes you seem smart, not snivelling.
- Ask classmates. If you’re still unclear, James, a straight-A student from Dartmouth, recommends that you “talk with other people about the topic.” Send an e-mail or corner them in the hall soon after the lecture. If they understand the topic, it will take them only a few minutes to explain it to you while it’s still fresh in their minds.
- Come prepared to exam review sessions (if offered). Many classes offer a formal review session the week before the exam. Go to these. Before you arrive, jot down all of the topics from your notes that you are still unsure about. Then, during the session, try to get all of them answered. Don’t be worried about having a lot to discuss. More often than not, review sessions suffer from too few student questions, so your professor or TA will appreciate your preparation.

The goal of these defensive tactics is to eliminate your question marks without adding any study time. If, however, despite your best attempts, some of these unclear topics persist until your review, your last-ditch defense is to skim. You probably won’t have time at this

defense is to skim. You probably won't have time at this point to look up detailed explanations from scratch for every leftover question mark. And, even if you did, the effort would be way too time consuming (remember: Straight-A students avoid long study hours), so skim over just enough material to have something to say for each of these points. On the off chance that one of these lingering question-marked topics comes up on the exam, at least you won't leave a blank page. But this situation can still be dangerous, so follow the first four strategies to reduce the topics you don't understand as much as possible before your studying begins.

Step 6 Provide “A+” Answers

Even the most prepared student can bomb an exam due to poor test taking skills. The potential pitfalls during an exam are numerous, but the most common are: (1) running out of time and (2) providing answers that, although detailed, don’t fully answer all parts of the question being asked. In fact, these two dangers work together in a devilish counterbalance, making them particularly hard to conquer. That is, if you try to avoid spending too much time on questions, then you are likely to provide time on questions, then you are likely to provide

incomplete answers. On the other hand, if you try to provide detailed answers, then you are likely to run out of time.

The situation sounds dire, but it’s not. With the right strategy, you can eliminate these fears and ensure that your grade properly reflects your level of preparation. Straight-A students recognize this point, and when asked about test-taking, they provided detailed responses, proving that for them, this final step is no mere afterthought. They treat the test-taking process with great respect, and this attention is reflected in their consistently high grades. Their advice has been culled into five key strategies. Together, they provide a comprehensive test-taking system, finely tuned through experience to maximize performance. Follow these rules on every exam, and you’ll be able to transform yourself into a test-taking machine—cool, confident, and ruthlessly efficient as you move from question to question, providing the best possible answers.

Strategy #1: Review First, Answer Questions Later

“I always read through the entire exam first,” explains Robert from Brown. This is good advice—for any exam, your first step should always be to review all of the questions. If it’s an essay exam or a technical exam with a relatively small number of questions, then read each prompt carefully. If the exam is multiple choice or contains many questions, skim through quickly and get a feel for which topics are covered. This review familiarizes you with the length and relative difficulty of what lies ahead. It also primes your brain for the topics you’ll need to address. “Always scan all the questions,” explains Anna from Dartmouth. “This allows your mind to think about all of them, even while you are focusing on one in particular.” In other words, while you toil away on an early question, another part of your brain, working in the background, will begin to retrieve information relating to the topics still to come. This actually happens, and it helps you answer the later questions more quickly.

Finally, and perhaps most significantly, this first step also helps you relax. Stress proliferates in a classroom right before an exam is distributed. It’s a make-or-break situation. Months of effort have led up to this single moment, and you have only a scant hour or two to prove what you know and secure your final grade. You begin to question yourself. Did you study everything you needed to? Have you forgotten important ideas? What if the to? Have you forgotten important ideas? What if the exam focuses on a subject you know nothing about? If you left it blank, what would happen then? Just thinking about this situation is enough to make most undergrads sweat.

However, by taking the first few minutes to carefully review the exam, you break this mounting tension. It gives you something productive to do that doesn’t involve actually answering questions. Once you complete this task and build a better idea of what to expect, the exam becomes less menacing. You’ve seen the questions, and (hopefully) none seem impossible. You begin to say to yourself: Okay, maybe this isn’t all that bad. Your confidence rises, your heart rate lowers, and your stress begins to dissipate. Now you can turn your full attention to providing standout responses.

Strategy #2: Build a Time Budget

At any given point during an exam, you should know the maximum number of minutes you have to spend on the current question before moving on to the next. As Doris from Harvard puts it: “I lay down very strict time limits for myself on each question.” This strategy goes a long way toward avoiding time trouble; it keeps your attention focused and prevents you from spending too much time on any particular question. The key to maintaining this keen awareness is to build a time budget. First, take the time allotted for the exam and subtract ten minutes. Next, divide this amount by the number of questions. The result is how long you have to spend on each prompt.

What should you do with this information? For an exam with a small number of questions, mark right on the test pages the time when you should begin and finish each one. For an exam with many questions, divide the exam into equal fourths, then jot down the time you should begin and end each section. In both cases, these recorded times will keep you updated on how close your current progress matches your predetermined schedule. Why do we subtract ten minutes in the first step? This provides a safety buffer. You want a few extra minutes available here and there to be able to double check your answers when you are finished, or go back and add more insights to questions on which you were rushed

Strategy #3: Proceed from Easy to Hard

Straight-A students almost never answer exam questions in the order that they are presented. Years of informal experimentation by successful students have demonstrated that the most effective way to tackle an exam is to answer the easiest questions first, and this is exactly what you should do. Start with the most approachable questions before moving on to the more forbidding. Don’t worry if this has you skipping around all over the exam—in most cases the provided order is irrelevant. The advantage of this approach is that it first focuses your energy on the questions you know the most about, ensuring that you get maximum points on these. It also gives you a better chance of conquering the more difficult ones. “I always skip a question if it does not come to me immediately,” explains Ryan from Dartmouth. “This keeps my mind clear to answer other questions and hopefully something will jog my memory.” When you come across something hard early on in the exam, your natural instinct is to panic. You have so many more questions to finish, and you can almost feel the minutes ticking away as you stare blankly at this one particular

roadblock. It can be tough to get your focus back to wring out as many points as possible from the easier questions that follow. If, instead, you tackle this same roadblock at the end of the exam, you'll find that the situation seems less dire. You've answered everything else, so all that's left to do is working out this final puzzler. More often than not, you will find the mental block diminished. Without the pressure of other questions looming in the background, you can take a more relaxed approach. You might not know the best answer, but you can spend some time to devise a reasonable answer. Because you have nothing else left to finish, you can spend the remainder of the time polishing this answer, thinking, and repolishing. The result is the strongest possible outcome given your state of preparation.

Strategy #4: Outline Essays

When facing an essay question, don't just start writing and see what happens. This approach leads to rambling answers and missed concepts. Instead, your first step should be to jot down a quick outline. This might seem like a waste of time, but in truth it can be invaluable.

First, reread the question carefully. As Matthew from Brown explains: "Usually, you can isolate three or four mini-questions from a single essay question." Underline each of these mini-questions; this will help you flesh out your outline and avoid an incomplete answer. "Then, outline on paper (not in your head) the way that you will use what you know to answer these mini-questions," continues Matthew. To do so, use the margin of the exam to jot down all of the points you can recall that are relevant to the question. Record only a few key words for each point to save time and space. For example, if you want to mention an argument made by an author named Robert Caro dealing with Lyndon Johnson's views on race relations, you might jot down: "Caro—race." Next, go back and check the question parts you underlined in the first step. Make sure each is adequately addressed by the points you just noted in the margin. When you're sure that you have identified all the relevant information for the essay, number these points in the order that you want to present them. Only now should you begin writing your essay. Follow your outline, and the writing will proceed smoothly. You should be able to quickly produce a solid response that draws on everything you reviewed and addresses all parts of the question asked.

Strategy #5: Check Your Work

Advice and go back and check your work. You will be surprised by how many times this final review turns up a mistake in a technical problem or an important concept that you forgot to mention in an essay. If, after your first round of review, you still have time left over, then go through and check again. If there is a problem you feel particularly shaky on, use this time to go over it in detail, augmenting the answer wherever appropriate. Don't worry about using carets and arrows to add in new phrases and facts to your essays, or to point out added steps in your technical problems. Neatness doesn't count on exams; it's the content that matters. It's tempting to relax after finishing your exam, perhaps walking proudly to the front of the classroom and handing it in before anyone else. But aside from the wistful stares of your classmates, this strategy is ill conceived. Double checking your work up to the last minute can make the difference between an above-average student and an academic star.

Part Two Cheat Sheet

Step #1. Take Smart Notes

- Always go to class and try to take the best notes possible.
- For nontechnical courses, capture the big ideas by taking notes in the question evidence/conclusion format.
- For technical courses, record as many sample problems and answers as possible.

Step #2. Demote Your Assignments

- Work a little bit each day on your assignments; avoid suffering from day-before syndrome.
- Read only the favored sources on the syllabus in detail. To decide how much time to spend on supplemental sources, remember the importance hierarchy: – readings that make an argument are more important than – readings that describe an event or person, which are more important than – readings that only provide context (i.e., speech transcripts, press clippings).
- Take reading notes in the question/evidence/conclusion format.
- Work in groups on problem sets, solve problems on the go, and write up your answers formally the first time.

Step #3. Marshal Your Resources

- Figure out exactly what the test will cover.
- Cluster your notes for nontechnical courses.
- Build mega-problem sets for technical courses.

Step #4. Conquer the Material

- Embrace the quiz-and-recall method. It’s the single most efficient way to study.
- Spread out memorization over several days. Your mind can do only so much at a time.

Step #5. Invest in “Academic Disaster Insurance”

- Eliminate the question marks for topics covered in class or from the reading that you don’t understand.

Step #6. Provide “A+” Answers

- Look over the whole test first.
- Figure out how much time you have to spend on each question (leaving a ten-minute cushion at the end).
- Answer the questions in order of increasing difficulty.
- Write out a mini-outline before tackling an essay question.
- Use any and all leftover time to check and recheck your work.

Essay and Papers

Paper writing is hard, but the good news is that it doesn’t have to be as hard as most students make it. Let’s begin by taking a closer look at the paper-writing process itself, which can be broken down into three separate components:

1. Sifting through existing arguments.
2. Forming your own argument.
3. Communicating your argument clearly.

The sooner you dispel the notion that writing is the most important part of paper writing, the easier it will become for you to reap the benefits of the straight-A approach.

Research Papers vs. Critical Analysis

Essays

Writing assignments come in many varieties. Some require a lot of original research, whereas others require only a critical discussion of a topic introduced in class. Some have ulcer-inducing length requirements, whereas others ask for only a handful of pages. We capture these differences with the simple classification scheme of research papers versus critical analysis essays. Some assignments, of course, may fall outside of these two descriptions, but, for the most part, they capture the major variations in paper writing. All of the advice that follows explicitly describes which of these two types it applies to.

Research Papers

A research paper requires you to choose a topic within provided parameters and then devise an original thesis relevant to your chosen topic. For example, the broad parameters for your topic choice might be “anything involving the British Empire,” the specific topic you choose from within these parameters might be “public schools and the British Empire,” and the thesis you choose might be “the public school system in nineteenth-century England had a curriculum specifically tailored to the requirements of the British Empire.”

Research papers require original research to support your original thesis, and, accordingly, their page lengths are long and their due dates are generally a ways off from when they are assigned. If you spread out the work appropriately and choose the right topic, research papers can provide a rewarding intellectual challenge. Proposing and supporting an original argument is exciting. However, if left until the last minute, these assignments can become a nightmare. More than a few students have suffered a nervous breakdown from the stress of tackling a major research paper at the last moment. So for these assignments in particular, take careful note of the scheduling recommendations that follow.

Critical Analysis Essays

Critical analysis essays are the bread and butter of most liberal arts classes. These essays are short, and they typically require you to analyze one or more of your class reading assignments. They are often set up as a comparison, for example: “How do Nordlinger and Hopkins differ in their approach to understanding American Isolationism. What cultural and theological sources account for these differences?” Critical analysis essays differ from research papers in several significant ways: Topics are provided in advance, your thesis is nothing more than a specific answer to the question asked in the assignment, and there is little-to-no original research required. Not surprisingly, these essays require less time to complete than research papers. Their goal is to test your understanding of the material presented in class, not to seek out and present new ideas. Don’t get the wrong idea—these essays are not necessarily easier than research papers. College writing assignments follow a simple rule: The required precision of your thinking works in direct proportion to the constraint of the material. That is, the more specific the assignment, the more subtle and detailed your thinking must be. So beware. If your assignment covers only one chapter, then you’re going to need to understand every word of that chapter and be able to articulate your analysis with precision.

Step 1 Target a Titillating Topic

Remember: A topic does not equal a thesis. A topic describes an interesting subject or area of observation. A thesis presents an interesting, specific argument about that subject or observation. Let's look at some examples As mentioned, for a critical analysis essay, the topic is provided, so this step won't be applicable. For a research paper, however, you get to choose the topic— so we'll focus on the specific case of research paper topic selection for the remainder of this section.

Choosing a Research Paper Topic

Typically, the professor will provide some loose parameters. For an art history course, these might be: parameters. For an art history course, these might be: "Any artist covered in the class so far." For a political science class they might be: "Economic policy and Latin America." The key is to choose a topic, within the constraints of the assignment, that excites you. All work that follows on your paper will stem from this topic; if you are not intrigued by the idea, then the paper-writing process will be tedious. If, on the other hand, you are fascinated, or at least curious, then the process will be that much easier. The best way to identify a titillating topic is to start looking for one early. "I work on topic ideas in my head and on scraps of paper beginning anywhere from a week to a month in advance of the actual deadline for a paper," explains Doris, a straight-A Harvard student. Follow this approach. On the very first day of class, read the description of the research paper(s) that will be assigned. The syllabus should describe each paper's topic parameters, and the professor will usually discuss these assignments briefly early on in the term. Once you know the parameters for the paper, you should constantly be on the lookout for a particular subject or observation that interests you. If one reading assignment really grabs your attention, jot down the topic so you'll remember it later. If a professor poses an interesting question during class, or piques your curiosity by describing a compelling open area of research, make a note of it. As Sean, a straight-A student from Yale, explains: "Keep an eye out for concepts that interest you in the readings and lectures. If there's something that grabs you, it will probably make a good topic." If you have trouble finding a topic in advance, you have two options. First, as Chien Wen, a straight-A student from Dartmouth, advises: "Approach your professor with some ideas you have and let him recommend some appropriate readings." Professors knows their field well, so they should have no trouble pointing you toward some resources to help flesh out your initial thoughts. Second,

as Chien Wen also advises: “Read your primary sources carefully.” Grab a textbook or similar general source from the class, and then skim through and look for angles that catch your attention, passages that make you ask “why,” or descriptions of competing arguments debating an interesting subject. “Be imaginative and intuitive—look for unusual connections between individuals, ideas, and broader themes,” says Chien Wen. In general, the more care you take during this first step, the easier the rest of the paper-writing process will be, so take your topic choice seriously.

Step 2 Conduct a Thesis- Hunting Expedition

You need to construct a thesis that makes a compelling argument concerning this topic. Once again, for a critical analysis essay, most of the work toward constructing your thesis has already been done for you. Typically, the essay prompt will contain a specific question (i.e., “How do the two arguments differ?” or “Why does the author say this?”), and your thesis is a summary of your answer. For a research paper, on the other hand, you might be dealing with a very broad topic that requires significant digging to find an interesting and supportable idea that can be expanded to fit the required page limit. In both cases, some initial research is required. A thesis devised from scratch is dangerous. Without some initial exploration, you have no idea whether or not your idea is viable, and there are few experiences worse than being forced to restart a paper after many hours of work. At the same time, however, you don’t want to dedicate days to intensively reading every book in the field in search of a perfect thesis, because this would be inefficient. For a critical analysis essay, the solution is simple: Review both the reading notes and lecture notes that relate to the essay prompt. And that’s it! This should provide a rough idea of how you are going to answer the question posed by the assignment. Therefore, your thesis has been found. Even though it’s simple, don’t skip this step for critical analysis essays. The earlier you develop an idea of what you are going to say, the more time you have to refine the nuances of your argument. For research papers, on the other hand, the task of finding a thesis is more complicated. No sources have been preselected for you, and no specific question has been provided. All you have is a general topic that you thought up yourself. Now you must wade into a vast sea of knowledge and somehow find enough material to devise a strong thesis—while avoiding drowning in the sheer volume of available information. Not surprisingly, the straight-A students interviewed for this book have mastered the art of conducting research paper thesis-hunting expeditions. Their goals are twofold: (1) find an interesting thesis that can be supported within the scope of the assignment; and (2) minimize the time required to conduct this search. Accomplishing both of these goals sounds hard, but straight-A students get it done. What’s their secret? One simple phrase: Start general, then move one layer deep. Let’s take a closer look at what this really means. Start General, Then Move One Layer Deep “I usually begin with basic sources,” explains Chris, a straight-A student from Dartmouth. “If I’m doing a paper on the Kurds in Turkey, for example, I get a recently published general history on this topic.” Similarly, if your topic is Faulkner’s early writing, you might find one or two Faulkner biographies and then focus only on the chapters dealing with his early years. If you have a

hard time finding a few general sources for your topic, then ask your professor—he'll have plenty of titles to recommend. In addition, keep in mind that most courses set up a reserve shelf at the campus library. This shelf contains books that were selected by the professor because of their relevance to the course. Typically, you can check out reserve books for only a couple of hours at a time, so they should always be available to the students who need them. This is a great place to find general sources. So that's step one (the "start general" part of the strategy). The reason we need a second step is because you shouldn't expect to find your thesis idea in a general source. Of course, you might get lucky and find an interesting thesis during this first step. In general, however, overview sources will be much too broad to reveal a targeted and interesting argument that hasn't already been written about extensively. The main reason you found these general sources is to get at their bibliographies. As Chris goes on to explain: "I read any chapters from my general sources that look useful for my paper. I then look up the sources used in that chapter." In other words, the second step of your thesis-hunting expedition is to examine the list of books and articles cited in the relevant sections of your general sources. From this list, choose the cited works that look the most promising, and then go find them in the library. These sources will be more focused— perhaps journal articles or books addressing only a small number of specific arguments. You are most likely to come across an interesting and appropriately targeted thesis idea using these more focused sources. Let's apply this approach to our Faulkner example from before. Perhaps one of our general sources cites a journal article on the influence of a specific European modernist writer on Faulkner. You find this journal article, and while reviewing it you notice that it mentions, in passing, a list of other modernist writers who might have had a similar influence. Aha! Now this could be an interesting thesis. You might choose one of these modernists from the list and then look for historical evidence of their connection to the primary writer. Perhaps, instead, one of the general sources talks about a period of Faulkner's life that he spent in Europe. Maybe it also mentions that our only records of this travel are letters written by the young author himself, and then it provides a citation to a collection of these letters. You then locate these letters, begin to read through them, and notice that he mentions a particular bar in London several times. This too might be a source of a fascinating thesis. You could investigate the intellectual climate of London nightspots of the time and posit their potential influence on Faulkner's work. From there, perhaps the core of your paper could be to present a piece of writing from right before the trip, and another from right after, and then argue which stylistic changes may have been influenced by his foray into the intellectual intensity of the London literary milieu. The key is to keep in mind that even very small observations can

lead to large, interesting discussions. How do you know your thesis idea is good enough to support an insightful paper? “A great thesis typically has at least these four qualities,” explains Christine, a straight-A student from Harvard. “It’s provocative, nuanced, direct, and inclusive.” She goes on to warn: “A thesis should, at the same time, also show a grasp of the complexities of a subject—‘in this poem, X symbolizes Y because Z’ is a weak type of thesis structure, far too reductive and simplistic—don’t be afraid to leave room. for ambiguity and unresolved issues.” Wendy, a straight- A student from Amherst, puts it simply: “The most important part of your paper is the thesis. Once you have a solid thesis, the rest just falls into place.” Here’s the tricky part: Your thesis will change and evolve as you continue the paper-writing process. This is inevitable, because you haven’t done your exhaustive research yet. At this early stage, your thesis more likely explains the type of connection or answer you hope to find, rather than the final connections and answers themselves. To revisit our Faulkner example, your early research may indicate that the social milieu of a certain London nightspot influenced a young Faulkner, but you might not yet know all the ways this influence was manifest. More research is required, and that’s okay. You should embrace this evolution of your ideas as the process continues. For now, it’s sufficient that your fledgling thesis looks like it’s on the path toward fulfilling the properties mentioned above. In other words, before continuing, make sure that your preliminary research strongly indicates that something similar to your thesis idea will be supported by the more detailed investigations to follow. Be honest with yourself: If you made up your thesis simply because it sounded cool, but have no real reason to believe it to be true, then you’re courting a paper-writing disaster. If, on the other hand, several pieces of early evidence point to the types of interesting connections described by your thesis, then you’re on the right track.

Step 3 Seek a Second Opinion

At this point you should have an interesting topic and a targeted thesis. You're well on your way toward a standout paper, but don't get too far ahead of yourself. It's time to take a step back. More than a few students have dived deep into the paper-writing process, supported by what they thought was a compelling thesis, only to find out many pages later that their premise was not as strong as it initially seemed. Perhaps they fail to find enough evidence to support the argument. Perhaps they stumble across another source that has already made the exact same point. Or, as is often the case, perhaps they find their thesis to be too broad to be succinctly argued within the scope of a paper assignment. The thesis-hunting tips of the last step help eliminate this possibility, but they're not enough by themselves. Once you think you have a good thesis, a final step remains before diving fully into the research and writing process. As Rielle, a straight-A student from Brown, explains: "I often talk to a professor to clarify my ideas before I begin writing." This is great advice. For every research paper and significant critical analysis essay (i.e., assignments more than just a few pages long), you should make a habit of discussing your targeted thesis idea with your professor. Go to office hours, or make an appointment, explain your topic and thesis, then ask the following questions:

1. *Is my idea appropriate for the assignment?*
2. *Does it cover too much?*
3. *Is it too simple?*

For a critical analysis essay, if the professor deems your thesis appropriate, this is a good sign that you are not going to get stuck. You can now move ahead with confidence. For a research paper, if the professor deems your thesis appropriate, take advantage of this time to explain some of the sources you plan to examine. The professor will likely have some additional sources to suggest. Write these down. This just saved you some suggest. Write these down. This just saved you some serious research time! For both types of papers, if the professor isn't enthusiastic about your thesis idea, then he or she will likely help you adjust it into something that is reasonable. When you leave this meeting, which should require only ten to twenty minutes, you will have confidence in the foundation of your paper. You can now move full speed into the research stage without fear of reaching a devastating dead end later on in the process. It's amazing how many students ignore this incredible resource. One simple meeting can make the difference between a standout work and an incoherent dud. Remember, this step is not intended as a shortcut. If

you skipped the previous step and show up at office hours without a targeted idea, the professor is not going to give you one for free. However, as Christine from Harvard explains: “They’ll rarely refuse to listen if they see you’ve thought things out in advance.”

Step 4 Research like a Machine

Not surprisingly, research is the domain of the research paper. For a critical analysis essay, your sources are already specified, and there are probably only one or two of them. Therefore, when working on an essay, you can skip this step and move on to Step #5 (Craft a Powerful Story), which describes how to organize your argument. For research papers, however, the following advice is crucial. Why? Because how you research can make or break your paper-writing efforts. If your strategy is haphazard—as is the case with most students—then two immediate problems will arise. First, the writing process will become frustrating and tedious, since you will be forced to continually stop and seek out new sources to extend your argument. Second, and more important, the resulting paper will be weak. A good argument requires a solid grasp of all relevant information. You want all the necessary facts and ideas to be at your fingertips, easily manipulated, sourced, and shuffled, as you build your case. If your sources are incomplete and disorganized, then your paper will be, too. On the other hand, you can also run the risk of spending too much time on research. Many eager students have succumbed to the horrors of research recursion syndrome—an unhealthy need to go find "just one more source," often leading to hours and hours of wasted time, dorm rooms overwhelmed with teetering stacks of books, and one seriously sleep-deprived student. This is grind territory, and you should avoid it at all costs. So while at first glance it may seem easier than choosing a thesis or writing the paper itself, in fact the research step of paper writing is easy to get wrong. Fortunately, straight-A students have figured out a way to walk the research tightrope—getting the information they need without becoming lost amid the endless available sources. Their strategy can be summarized by a simple phrase: Research like a machine. They follow a system—a mechanical process, the same for every paper—that produces consistent high-quality results. Feed them a thesis, watch their wheels turn, and then out pops a set of photocopied, organized, and annotated notes. Their system ensures that the quality of their research is sufficient to fuel a standout paper and at the same time requires the minimum amount of time to achieve this goal. Sounds pretty cool, right? But how does it work? Their system is based on these four steps:

1. *Find sources.*
2. *Make personal copies of all sources.*
3. *Annotate the material.*
4. *Decide if you're done. (If the answer is "no," then loop back to #1.)*

That's it. The devil, of course, is in the details. So let's take a closer look at what each of the steps entails.

1. Find Sources

There are two types of sources: general and specific. As described in Step #2, the former include overviews of your topic (i.e., biography or textbook), whereas the latter focus on specific arguments (i.e., a journal article or book about a specific event or idea). For a college-level paper, most of your best information is going to come from specific sources. The hard part, of course, is finding them.

Step #2: Start with general sources and then look in their bibliographies for more targeted resources.

As David, a straight-A student from Dartmouth, says: "Once you have two or three materials that you like, it's all about the bibliographies…find out where the author found the fuel for his arguments and go check those out." In Step #2, I suggested that you ask your professor or browse the course reserve shelf to find some of these general sources. Another place to look is your library's online card catalog. This sounds obvious, but using an online catalog correctly is not a trivial task. Just typing in keywords might not turn up every book that deals with your topic of interest. You need some more advanced tricks. One such trick is to take advantage of the Library of Congress (LOC) topic classifications. What are these? The Library of Congress tries to classify all books into one large hierarchy of topics. For example, Heinrich Harrer's fascinating book The White Spider (an account of the first team to ascend the infamous North Face of the Eiger Mountain) is described by the following two classifications:

1. **Mountaineering—Switzerland—Eiger—History**
2. **Eiger (Switzerland)—Description and travel**

When you find a book in an online card catalog, its corresponding LOC topic classifications should be listed. The cool part is that these topics should also be hyperlinked. That is, if you found an entry for The White Spider, you could click on Mountaineering—Switzerland—Eiger—History to return a list of every book in the library under this classification. Therefore, if you find one general source on a topic, then you can easily find many others. And once you have found general sources, you can turn to their bibliographies to find something more specific.

The second strategy for finding specific sources is to search for them directly. This approach is important. Not every specific source relevant to your thesis can be found in the bibliography of a general source. This is particularly true for more recent scholarship. Books take a long time to write; if a paper was published only within the last few years, it is

probably too soon to find a general tome that cites it. The problem here is that specific sources can be difficult to find. For example, continuing with the Eiger topic introduced above, let's say your thesis within this topic is: "The many failed attempts to ascend the North topic is: "The many failed attempts to ascend the North Face of the Eiger played an important role in the development of Swiss cultural identity during the first half of the twentieth century." Finding a general source about the Eiger, such as The White Spider, is easy enough. But finding a targeted source on the impact of the Eiger on Swiss cultural identity will be significantly more complicated. Simply typing "the impact of the Eiger on Swiss cultural identity" into the library card catalog probably won't turn up many hits. So how do you locate these elusive specific sources? There are four main search tactics.

Search Tactic #1: Break Up Your

Query into General Chunks If you can reduce your specific query to a group of related, yet succinct, general searches, you will have a much better chance of finding a relevant source. Following the Eiger example, you might try:

- Alpine hiking Switzerland culture
- Switzerland cultural identity
- Alpine hiking
- Mountaineering Switzerland

Any one of these more general queries could turn up a source that either directly references your thesis or makes a point that supports your thesis. With practice, you will get better at constructing these general probes aimed at illuminating a specific idea.

Search Tactic #2: Use Journal Databases

As mentioned, specific sources are more likely to be scholarly articles than books. Your library card catalog does not index articles. Therefore, as Chris from Dartmouth recommends, you should consider "article database searches (like JSTOR) on the specific topic." How do you find these databases? Your library Web site should contain a list of available electronic resources. At some point during your freshman year, you will probably be given an orientation on this topic. (Even if you sleep through it, as most of us do, it shouldn't be that hard to figure out.) This list of resources is usually broken up by academic concentration (i.e., Political Science, Anthropology, and so forth). Go to the concentration relevant to your paper, and you should see a list of searchable archives. Many of these resources will be databases of scholarly articles, so search these focused

databases using the general search term chunks described in the preceding tactic and see what pops up. If your topic is interdisciplinary, meaning that it draws from multiple academic concentrations, follow Chris's advice and try a big database like JSTOR (http://www.jstor.org), which contains scholarly articles on a large variety of academic topics.

Search Tactic #3: When in Doubt, Google

"Google is your friend, first and foremost," says David from Dartmouth. This is good advice—as Google is a great tool—but it should be used with some caution. A good rule of thumb is: Don't cite Web sites. Academics don't trust them. Journal articles go through extensive peer-reviewing before they are published, and academic books are written by experts and rigorously edited. On Web sites, however, anything goes. Therefore, they're worthless in terms of supporting an argument. Referencing Web sites is something you do in high school. If you do this in college, be prepared to experience the wrath of your professor. This being said, Google is still immensely useful. Not for finding Web sites to cite, but for finding Web sites that reference books and articles relevant to your thesis. For example, a search for "Eiger and Swiss Cultural Identity" might actually turn up some Web sites dealing with, or related to, this obscure issue. The Google search algorithm is a lot smarter than the one used by card catalogs, so even very complicated queries can turn up surprisingly accurate results. If you're lucky, some of these Web sites will mention specific sources—a book name or article title. Now you can look up these in your card catalog, and then treat them like any other formal source.

Search Tactic #4: Ask a Librarian

Most college libraries are staffed with reference librarians who want nothing more than to help you find the information that you seek. It's what they're paid to do, and they're great at it. Too many students, however, ignore this wonderful resource. Here you have experts who can save you hours of struggle by conducting advanced searches on your behalf; yet most students never think to take advantage of the opportunity. Making a visit to the reference desk should be one of your first steps when researching a challenging assignment. Simply explain your topic and thesis to the librarian, and he or she will walk you through several searches. Not only will this identify some specific sources that you may have otherwise missed, but it will also expose you to new library resources and databases that you can now use for future projects. The more time you spend with reference librarians, the better you will become at finding solid material on your own.

2. Make Personal Copies of All Sources

How you handle the sources makes a big difference in the overall efficiency of the paper-writing process. Though there are many ways to deal with the book chapters and articles relevant to your research efforts, many of the straight-A students interviewed for this book favored the following strategy: Make a photocopy or printout of all relevant material. If you find a book that has two chapters related to your topic, photocopy those two chapters. If you find an important journal article, photocopy the entire article. If you find an article online, or a relevant Web site, print it out. The goal is to create your own personal hard copy of all sources. The advantages of this approach are numerous. First, these hard copies are portable. It's easier to carry around a stack of photocopies than a stack of books and journals, so you can take your research with you to your secret study spots or office hours. Second, the information is more accessible. No flipping through big tomes or searching your computer hard drive; all the relevant information is stored in one condensed stack. You can now physically organize your sources, for example, by putting them into piles by author, clustering relevant arguments together with paper clips, or dividing them into folders labeled by subject. As Sean, a straight- A student from Yale, explains: "It's often easier to grasp something when you have a hard copy in front of you." Third, you can mark them up with impunity. "Printouts and Xeroxes of source info are often superior to books or digital copies," explains Christine from Harvard, "since you can annotate them to death." Feel free to underline things, highlight, draw arrows, cross out sections, or put big stars next to important points. In general, this approach maximizes the control you have over your information, ensuring that your sources work for you. However, there are a couple of important caveats to remember. First, make sure you label each photocopy with all of the information needed to later construct a formal citation. For example, if you photocopy a book chapter, jot down on the first page the name of the book, the author(s), the publisher and its location, and the copyright date. Or, if you prefer, follow Christine's advice and simply "make a photocopy of the title and copyright info" as found in the front of the book, so you can use it later while constructing the works cited for your paper and ensure that you don't find yourself "running back to the library at the last moment for citation info." Second, photocopy each source's bibliography. This way, if you come across an interesting reference in one of your photocopies, you will have easy access to the full citation attached to the reference. For articles, the bibliography is almost always listed immediately following the article. For books using the endnote format, you might have to flip to the back to find the bibliography for a specific chapter.

3. Annotate the Material

Finding a source, of course, is just the first step. A stack of photocopied pages is worthless if you don't know what information it contains and how it might be useful to your paper. You need to review the sources and annotate them with a concise description of the important information, if any, that they contain. Be careful how you proceed here. Your first instinct might be to follow the advice described in Part Two about how to take notes on your reading assignments. Don't do this—it's overkill. For now, you should be content to follow the advice of David from Dartmouth, who recommends **that you "skim, skim, skim.**"

Use The Following:

A. **Skimming:**
    I. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

B. **Entertainment**
    I. **Method 1-Speed Reading. Pages 58-63.**

C. **Methods for Basic Knowledge For Deep Work or Bible Study.**
    I. **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
    II. **Method 2-Use 80/20 Principle For Reading. Pages 67.**
    III. **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
    IV. **Method 4-Flip Through Pages and Analyse. Page 69.**
    V. **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
    VI. **Method 6-Devotional Bible Read. Pages 72-73**

Specifically, read through the source quickly. Every time you pass by an important definition, idea, or opinion that seems relevant to your thesis, jot down (on your computer or by hand) the page number and a quick description. For example, if the author argues a particular point of interest, write only what this point is— there is no need to also copy down the evidence he uses to support it as you would for notes on a reading assignment. If the source is a book, then, as Anna from Dartmouth explains: "Pick out only the chapters that relate to the specific aspect of the topic that you are interested in…it is not necessary to read the entire book!" When you're finished, staple your annotations to your personal

copy of the corresponding source. In general, proper source annotations should act as concise pointers, containing just enough information to show you where the relevant arguments are hiding. In the next step, where you organize all of your gathered information into a coherent structure, these simple annotations turn out to be exactly what you need to quickly assess the importance of each source. Therefore, you will end up needing to carefully read only the passages that help your paper. You should not think of this step as adding work. As you will soon discover, these concise annotations are actually going to save you a significant amount of time.

4. Decide If You're Done

There is no simple answer to this question. While it would be nice to offer a perfect formula for how much research is enough, it is impossible—there are just too many variations to contend with. Some short papers might require dozens of sources, while some long tracts may focus entirely on a handful of original documents. What follows is a rough procedure that should aid your decision about whether or not you have gathered enough research. Remember, this is just an approximation. Always keep in mind the context of your specific assignment. However, this approach should help reduce the guesswork involved in completing this step.

The Research Termination Determination Procedure:

1. List the topics (specific questions, facts, or accounts from your research) that are crucial to support your thesis.
2. List the topics that might help you support your thesis.
3. If you have at least two good sources for each of the topics from #1, and have at least one good source for a majority of the topics from #2, then you're done. Otherwise, you need to keep researching.

The reason these criteria are just an approximation is because at this early stage you probably don't know exactly how your thesis argument will proceed, so you don't know exactly what information you need. This procedure simply helps you estimate as best you can. By separating out the crucial from the potentially helpful, you are less likely to get stuck hunting down an obscure piece of information that you could do without. This approach is advised by David from Dartmouth, who describes the following similar procedure for sorting his research sources: "I make three piles of my sources: very useful,

potentially useful, and not useful." To draw from our previous example, if your thesis deals with the Eiger and Swiss cultural identity, you might construct
your list of "crucial" and "might help" topics as follows:

1**. Topics that are crucial to support the thesis:**

- Basic historical information concerning the Eiger (when it was discovered, when it was first climbed, and so forth)
- Arguments concerning Swiss cultural identity at the turn of the century

2. Topics that might be helpful in supporting the thesis:

- Memoirs of people who were involved in the first ascents of the mountain
- Press accounts from the time (both Swiss and non- Swiss)
- General discussions of the role of sports and national pride

If you have a hard time tracking down one of the topics from the second list, you would still be okay. If, on the other hand, you have a hard time tracking down either of the topics from the first list, then you need to keep looking. In the next step, where you actually begin to outline your paper, it's expected that you might need to return briefly to the research phase and find additional sources to fill in any holes. If you follow the procedure above, however, you will minimize the amount of secondary research that you are forced to conduct—thus saving yourself from more hours in the library.

Step 5 Craft a Powerful Story

This step is where the magic happens. It's the fun part of paper writing—the moment of intellectual eureka. You have already defined (and verified) a compelling thesis, and you have at your disposal a collection of well organized and annotated research material. Now it's time to stretch your mental muscles and pull these pieces together into a powerful story. As Anna from Dartmouth says: "In order to write a great paper, you really need to make connections that other people haven't made, and the only way to do that is to think." This is the step where such thinking occurs.

Formulate Your Argument

"You must have a vision of what the overall structure of your paper will be," explains Frank, a straight-A student from Brown. "Organization of thought can make a decently researched essay into a fine piece of academic work." Formulating a solid argument, however, cannot be reduced to a system; it is a mental exercise that requires critical thinking and creativity. At the college level, there is no set structure that allows you to fill in the blanks and automatically produce a smart paper. As mentioned in the opening to Part Three, the intro, body and conclusion nonsense introduced in high school won't do you any good here. It's too simplistic, and your professors will be expecting more. In general, a good college-level argument should accomplish the following:

1. **Draw from previous work on the same topic to define the context for the discussion.**
2. **Introduce a thesis and carefully spell out how it relates to existing work on similar issues.**
3. **Support the thesis with careful reasoning and references to existing arguments, evidence, and primary sources.**
4. **Introduce some final prognostications about extending the argument and its potential impact on the field as a whole.**

There is, however, no set order or format for presenting these general points. One paper might start by defining the context and then move on to the thesis. Another paper might start with the thesis, argue it, and then introduce the broader context at the end. Many papers might interweave all four points. There is no right answer here. And the hard truth is that the only way to get better at organizing and presenting your thoughts is through practice. So write a lot and read good arguments a lot. This is the best recipe for

developing your skills for this step. That being said, there are some general pointers about how to go about formulating your argument. These aren't rules for what to say; rather, they are tips for how to get your brain fired up and your creative juices flowing.

Tip #1: When it comes time to craft the storyline of your paper, put yourself in the right mind-set. Grab a copy of Atlantic Monthly, The New Yorker, Harper's, or any other publication that features well crafted discussions. Peruse some articles, and then go for a walk along a quiet path. Alternatively, as David from Dartmouth recommends: "Talk to friends —if they are good friends they will allow you to bounce ideas off of them and talk through your work." You can also cloister yourself in a dusty. wooden-shelved, overstuffed-armchair-filled corner of the library, or argue with your professor during office hours. Reread related articles and chapters from your course syllabus. Watch a PBS documentary. Do whatever it takes to get the reasoning portions of your mind inspired and curious.

Tip #2: At this point, grab your source material from the previous step. If your assignment is a critical analysis essay, this will consist of only a couple of books and your reading notes. If it's a research paper, you might have a large stack of photocopied chapters and articles. In either case, dive into this information, and start letting the relevant facts and arguments settle into your mind. This is where your annotations will point you toward what's interesting, and help you avoid the irrelevant.

Tip #3: Take a break. Do something else. Let the pieces float around in the background noise of your mind. "The first thing I do when I have a paper to write is take a nap," explains Laura, a straight-A student from Dartmouth. "I crawl into bed and just think…as long as I'm thinking about the subject when I fall asleep, I will dream about the material and usually come up with some sort of interesting idea." Similarly, start looking for any opportunity to do a little thinking about your argument. "I think about my paper when I go around completing my daily chores, when I walk to class or when I wait on line in the dining hall," explains Anna from Dartmouth. Use this downtime to slide the pieces of your argument around in your head and play with the structure a bit. Keep returning to your research material as needed to find more details and to increase your understanding. You need to

expose yourself to the source material again and again to fully internalize it. Only then can you really pull together the best possible argument.

Constructing an Outline

You need an outline to capture the argument you just spent so much time devising. Keep in mind, however, that all outlines are not created equal. In fact, there are two major outline-related mistakes made by students.

First: under-outlining. If your outline lacks enough detail, it's not going to serve its purpose as a structure to guide your writing, and you will end up writing from scratch. You want to avoid this at all costs; it leads to argumentative dead ends and weak structure overall. "In high school, I wrote all my papers in one go, starting with the intro, constructing and polishing each sentence in order," explains Christine from Harvard. "In college I've become a huge fan of outline-based writing, which has made my essays much more tightly argued and given them better, clearer trajectories…since I can now shuffle topics around until they flow with some natural order and logic— rather than straining rhetorically to bridge from one idea to another."

The second mistake: over-outlining. Some students construct beautifully intricate outlines, replete with three or four levels of information, roman numerals, digits, letters, and tabs flying everywhere—the type of outline they taught you to make for your fifth-grade research project. Don't do this either. It constrains you. As Doris from Harvard explains: "One pitfall to avoid is getting stuck in the outline stage—I've seen students who spend far too much time embellishing their outlines when they should really have begun writing the paper itself long ago." When it comes time to write, you will be hampered if you constructed an outline that practically spells out what each sentence of each paragraph should say. These sorts of low-level decisions should be made when you write, not before. It's not until you're actually putting words on paper that you will understand the best way to make each small piece of your argument flow. Don't let an outline make these decisions for you. The happy medium between these two extremes is to construct a topic-level outline. Before we can cover the specifics of this process, I must first define what I mean by "topic." Here, I use the term to describe any self contained point that you might discuss in your paper. Typically, this is something more general than a piece of evidence but also more specific than a multipart argument. For example, here are some sample topics for our hypothetical paper about the Eiger:

- Our thesis about the Eiger and Swiss cultural identity
- Early written accounts of the Eiger

- The first ascent of the Eiger
- Contemporary press accounts of Eiger summit attempts
- Mentions of the Eiger in early-twentieth-century popular culture
- Mentions of the Eiger in early-twentieth-century Swiss tourist brochures
- MacMillan's thesis about the Alps and European identity
- The relationship between our thesis and MacMillan's argument
- Concluding thoughts about our thesis—implications and future work and future work

We start the outlining process by constructing a topic skeleton. This is a list of all the topics you will discuss in your paper, presented in the order that you plan to include them. Type this list directly into your computer because you will later need the ability to insert text in between items. Your topic skeleton succinctly describes the structure of your argument. For example, we might take the previously mentioned topics and order them as follows to form a topic skeleton for our hypothetical Eiger paper:

1. Mentions of the Eiger in early-twentieth-century Swiss tourist brochures
2. MacMillan's thesis about the Alps and European identity
3. Our thesis about the Eiger and Swiss cultural identity
4. Early written accounts of the Eiger
5. The first ascent of the Eiger
6. Contemporary press accounts of Eiger summit attempts
7. Mentions of the Eiger in early-twentieth-century popular culture
8. The relationship between our thesis and MacMillan's argument
9. Concluding thoughts about our thesis—implications and future work At this point, no specific pieces of evidence are described by our outline, but it does capture how the paper will flow. In a perfect world, you would have at least one or two good sources to support each topic.

However, it will often occur that as you formulate your topic skeleton, you come across a topic that you really need to include but for which you don't yet have any sources. That's okay. We mentioned at the end of the last step that once you start formulating your argument, you might come across some holes that need to be filled. This is exactly where these holes will become noticeable. Once you have completed your topic skeleton, you need to return to the previous step and find sources to support any of the currently unsupported topics. If you followed the research termination determination procedure from before, there shouldn't be too many of these holes.

Filling in the Details of Your Topic Outline

Once you finish your topic skeleton, and find sources for all of the unsupported topics, it's time to fill in the supporting details. This next step is crucial. As Christine from Harvard explains: "Below each bold header [in my topic skeleton], I compile in regular typeface the evidence pertaining to that header." You should actually type quotes from your research material right into the word processor document containing the outline, and label each quote with the source and page that it came from. For example, under the "first ascent of the Eiger" topic from above, you might insert quotes from a few different books on the mountain as well as excerpts from several contemporary articles. Some of these latter excerpts may also be included under the "contemporary press accounts of Eiger summit attempts" topic. It's okay to share information between topics at this point, since you will sort out which quote to use where once the writing process begins. This is not a time for caution—if it seems relevant, stick it in.

At first, this step may sound excessive. By the time you finish, your outline will be large and filled with quotes, perhaps even longer than the projected length of your completed paper. Fortunately, this process is greatly simplified by the format of your gathered research materials. Because you made a personal copy of and annotated every source, finding the appropriate pieces of evidence to include in your outline will be much easier than if you had to page through each book and article from scratch. Furthermore, the benefits of this outline far outweigh the annoyance of constructing it. As Robert, a straight-A student from Brown, explains; "I find that using this process helps me avoid digging through a pile of books and articles for each piece of information I need as I need it during writing." Remember, the goal of the straight-A approach is to separate the different components of paper construction. When it comes time to write, you don't want to be flipping through your sources, hunting down the right support. This drains your energy, increases your pain, takes time, and reduces the quality of your writing. This is why it is crucial that you extract the information from your sources in advance. Later, the writing process will be reduced to the much simpler task of simply building a framework around this already identified and organized information structure.

Step 6 Consult Your Expert Panel

"I discuss ideas with friends," says Suzanne, a straight-A student from Brown, "and am therefore usually pretty confident with my argument by the time I sit down to write." Suzanne reinforces a key observation: The more input you receive, the better your paper will turn out. And because soliciting advice is easy, you might as well get your outline reviewed by a group of people you trust. In the straight-A lexicon, this strategy is called "consulting your expert panel." The technique is popular because it requires little effort on your part, but the impact on your paper quality is significant. This is the final push that transforms your thinking from interesting into compelling and your paper from competent into a standout.

Choosing Your Expert Panel

The size of your expert panel should be directly proportional to the importance of the assignment. If it's a one-page essay worth 5 percent of your grade, then your expert panel should consist of only yourself. If it's a medium-size critical analysis essay, you might aim for two opinions. If it's a major term paper worth a significant portion of your grade, than you may want to solicit feedback from as many as half-a-dozen well-chosen people. Who should sit on your panel? Your number one pick should be your professor. Unless he specifically states that he won't discuss drafts in progress (which professors sometimes do to avoid an overload of conferencing in a large class), definitely plan to bring your outline to office hours. Lay out the general shape of your argument, and the types of sources you are drawing from and where. More often than not, the professor will have some targeted advice on how to better present your points. He might suggest a new order or an added topic that should be addressed. As David from Dartmouth notes, this meeting also "will help you to create a rapport with the prof, and give you an idea of what he or she is looking for." Yes, you've already talked with your professor in Step #3 (Seek a Second Opinion). Don't worry. There is nothing wrong with talking to a professor on two separate occasions for one paper. The first conference was quick and dealt with making sure you were starting off in the right direction. This second conference is more detailed, making sure that you managed to stay on course. Keep in mind that some students talk to their professors many times during the paper-writing process, perhaps once or twice a week. This is overkill and shouldn't be necessary if you've followed the efficient strategy laid out in this book. But rest assured that two visits are hardly monopolizing your professor's time. In addition to your professor, as David also suggests, "if you have smart friends, get their help too."

Friends from the same class are your best bet, since they will already understand the constraints of the assignment. If you aren't close with any classmates, then tap a friend with a compatible academic background. For example, if your paper is for a history class, it makes more sense to talk to a liberal arts major than an engineering major. The former will be more familiar with this style of paper. Pick a half-hour period to sit down with each friend you chose. Explain your thesis and then run through your outline, touching on your main supporting arguments. Your friends will help you identify pieces of your structure that are unclear or unnecessary. As Jason, a straight-A student from the University of Pennsylvania, explains: "If you can explain why your argument works in a rational, step-by-step manner, and you have an arsenal of sources to cite to support the argument, then you're ready to go." One final warning: Before discussing with a classmate, make sure that collaboration of this sort is allowed. It should be no problem for research papers, but for focused critical analysis essays the professor may specifically forbid that you discuss your response with other people from the class.

Step 7 Write Without the Agony

If you've followed the Straight-A strategy so far, writing should be the most straightforward part of constructing a standout paper. This step is not mysterious. At this point, you know what to say and in what order, so all you have to do is clearly communicate your already well developed argument. "Once I have the outline, my brain relaxes," explains Jeremy, a straight-A student from Dartmouth. "I don't need to think anymore about structuring the paper, but rather just think about how to best articulate my thoughts." Note, however, that this book is not about the mechanics of writing. This is a skill that you will need to develop on your own. In general, the more you write outside of class, the better; so, to improve your skills, try to write as much as you can. Also, don't be afraid to plunk a Chicago Manual of Style above your desk or flip through well-known style guides like William Zinsser's On Writing Well. These can help you focus and polish your writing, and professors appreciate clear exposition. This being said, there is not much left to cover. You know what you have to do: Put words on paper. It's not easy, but, if you followed the previous steps, it won't be nearly as agonizing as most students make it. I leave you with only three succinct pieces of logistical advice to help guide you through the process of combining your writing skills with your straight-A preparation to produce the best possible paper:

Separate Your Writing from the Steps That Come Before and After

As Greta, a straight-A student from Dartmouth, explains, when it comes to the writing process she "would map out a schedule, for example, write two pages a day for five days, and then edit one day." Ryan, another Dartmouth student, admits that he "usually gave about two days for the actual writing, but the research part of the paper usually happened a few weeks before." Both of these students' habits are instructed by a simple rule:

Separate your research from your writing and your writing from your editing.

Of course, this is not always practical for a small critical analysis essay, but it's crucial for a more substantial research paper. A fresh mind produces better results. It's hard to write well when you've spent an exhausting morning researching in the library. It's equally as hard to edit carefully when you have already spent hours that day writing the words you are about to review. "Having time away from the paper," explains Jeremy from Dartmouth, "allows you to come at it with better concentration."

Write in Quiet Isolation

Writing requires substantial concentration. If you work in an area with a lot of ambient noise, you will become distracted and your efficiency will decrease dramatically. Therefore, if you have a laptop, retreat to a distant, silent corner of a faraway building to work on your writing. “I am most productive,” explains Suzanne from Brown, “in a place where I have total silence and no external stimulation—for example, the library stacks.” As I emphasized in Part One of this book, avoid, if possible, study lounges, crowded areas of the library, and public computer labs. These places are noisy, and, as Rielle from Brown warns: “You’re always running into people and getting snagged by fascinating conversations.” If you don’t have a laptop, then work at the computer in your room at times when your roommates are in class or at meetings. If necessary, arrange in advance to kick them out for a few hours so you can work in peace. In addition, you should schedule your writing to correspond to your energetic high points during the day. For me, this meant working right after breakfast with my first cup of coffee. For others, this might be the early evening, right before dinner, or the afternoon after a post-lunch workout. The key is to recognize that writing is perhaps the most demanding (in terms of focus required) intellectual activity you will do while a college student. More so than reading, solving problem sets, or studying, writing demands all the energy and focus that you can manage.

Follow Your Outline and Move Slowly

Chris from Dartmouth offers simple advice for tackling the writing process: “I use the outline I’ve created as a guide and just sort of build from that, taking it one paragraph at a time.” Follow this example. Use your outline to direct your writing, setting up and expounding on each of the topics in a clear, cogent way, and copying and pasting quotes directly into your paper wherever needed. Keep your attention focused on the topic at hand. Your mind is free from concerns of structure and sources at this point, so you can concentrate on articulating specific points clearly and strongly. Always make sure your current point reads clearly before moving on to the next. Some students have success by writing their first draft quickly and sloppily, and then returning to clean it up in many successive editing rounds. In your case, however, because you’re working from a detailed topic outline, it will end up being quicker to write carefully the first time. Moving fast tends to produce time-consuming dead ends later on, and ultimately necessitates major rewrites. And, believe it or not, that’s all you need to know. So stop fearing writing! If you follow this system, this step, though still challenging, won’t take an excessive amount of time. Leave

the all-nighters to the average students, get your first draft done quickly and effectively, and then go have some fun.

Step 8 Fix, Don't Fixate

Editing your paper is important, and this shouldn't come as a surprise. If you hand in pages containing spelling and grammatical mistakes, the professor will be more than disappointed—she's likely to lower your grade as a result. Even if your argument is brilliant, it's really hard to get past those simple errors. This last step of the paperwriting process aims to free your work of these imperfections. At the same time, however, you don't want to overedit. Many students fixate on these fixes, and end up devoting hours to reviewing draft after draft. This act of academic self-flagellation is especially prevalent when working on big research papers. After all the work you dedicate to crafting a masterpiece of an argument, you begin to fear letting your baby out into the world. It's sort of like suffering from a nerdy version of Stockholm Syndrome— and it's a drag. "You can edit a paper forever and still not be satisfied," explains Frank from Brown. "So it's important to know when to just print the damn thing out and send it off to its fate." The goal here is to devise a simple system, something you can follow for every paper to help you root out the embarrassing typos and confusing constructions but also to prevent you from becoming a grammar psycho. Drawing from the advice given in my straight-A interviews, I present in this step a system that meets these criteria. It involves three simple passes through your draft. No more and no less. For those of you who are used to endless editing runs, the idea that three passes is enough might sound suspiciously quick. Or, if you're the kind of person whose idea of proofreading ismhitting the spell-check button, multiple runs might seem hopelessly time consuming. But rest assured, the system is efficient and it gets the job done. As we will soon discuss, the key is the specific kind of attention given to each pass. Here is how it works:

The Argument Adjustment Pass

Your first pass through your work should be conducted on your computer. Read carefully, and focus on the on your computer. Read carefully, and focus on the presentation of your arguments—don't worry about small grammatical mistakes for the moment. Take in the paper one paragraph at a time. If a section is awkwardly stated, clarify the sentences. If it makes a point you already explained earlier, ruthlessly cut it out. If the argument is lacking detail, add in more sentences as necessary to fully explain your point. If a transition is lacking between topics or paragraphs, add one. Also be on the lookout for any major structural issues. Sometimes you don't realize until you finish an entire draft that your topic outline wasn't optimal. Don't be afraid to shift around major chunks of text. This is your

chance to make serious edits to the structure of your paper, so take this seriously. Do this editing at a time when you are rested and unhurried by upcoming appointments. For a large paper, spread this pass out over several days if possible. When you're done, your paper may still contain small mistakes. That's okay. You'll fix those next. The goal here is to tweak the argument until you're satisfied that it makes every point that you want to make in the order that you want to make them. Once you're done with this pass, these big picture details are locked in.

The Out Loud Pass

The Argument Adjustment pass is important, but not sufficient by itself. As Robert from Brown explains: "My papers always read differently on the page than on the screen." And as Melanie, a straight-A Dartmouth student, adds: "having a hard copy to read and mark up was absolutely necessary." Accordingly, for this next pass, you should first print out a copy of your paper, and then take it where you can have some privacy. With a pencil in hand, and this is the important part, begin to read your paper out loud. Don't cheat. Use a strong voice and articulate each word as if you're delivering a speech. For a long paper, it may take a long time to read the entire thing, so be prepared to split this into several sessions. You might also want water or hot tea on hand to prevent you from losing your voice. Whatever you do, however, don't avoid actually articulating every word. Whereas the last pass focused on your arguments, the goal of this pass is to root out small mistakes that might otherwise distract a reader from your engaging thesis. While reading, whenever you come across a grammatical mistake or an awkward construction, mark it clearly on the printout. Then go back up to the beginning of the preceding paragraph and start reading again. After you have marked up the entire document, go back to your computer and enter the changes you noted on your printout. A word of warning—this process always takes longer than expected, so leave yourself plenty of time. The rationale behind this approach is simple. As Ryan from Dartmouth explains: "Reading it out loud helps you catch typos or strange wording better than reading it in your head." No matter how many times you review a draft, if you're scanning silently, there are certain awkward phrases you might skip over every time—our subconscious minds have a habit of patching over these mistakes when reading our own writing. When you say the words out loud, on the other hand, your ear will catch even minor problems and draw your attention to them. "Something that looks fine on paper will jump out as strange or poorly worded when you hear it," explains Jeremy from Dartmouth. Therefore, by reading the paper out loud, you

will catch most mistakes in your paper in just one pass—requiring much less time than the multiple silent reviews necessary to achieve similar results.

The Sanity Pass

Because the previous passes were so careful, you're almost done, and you've only read through your work twice so far! Just to be sure that something embarrassing didn't slip through, it's a good idea to make a final, quick pass through a printed copy of your paper before handing it in. You don't have to do this pass out loud, and feel free to move through it quickly. But definitely use a printed copy, rather than reading on your computer screen, since a hard copy has a better chance of revealing a typo. If possible, separate this pass from the previous two. In fact, it's fine to do this the morning of the deadline. At this point, there should be no major mistakes lurking in your document. The goal here is twofold.

First, as mentioned, this last pass catches stray mistakes.

"I tried to always reread my papers before handing them in," explains James, a straight-A student from Dartmouth. "I try to smooth out any last kinks in the flow during that final editing."

Second, and perhaps more important, it also provides closure on your paper.

Because your work is so polished by this point, this final read-through should essentially go smoothly. As a result, you will develop a better feel for the flow and enjoy the experience of watching your argument unfold. This should help put your mind at ease. After all your work, think of this last pass as your reward. A final review before the paper leaves your hands, probably never to be read by you again. That's why we call it a sanity pass. Once you hand in your paper, you can now confidently tell yourself: "Unless I'm going insane here, I'm pretty sure that I just handed in a damn good piece of writing!"

Part Three Cheat Sheet

Step #1. Target a Titillating Topic

- Start looking for an interesting topic early.

Step #2. Conduct a Thesis-Hunting Expedition

- Start with general sources and then follow references to find the more targeted sources where good thesis ideas often hide.

Step #3. Seek a Second Opinion

- A thesis is not a thesis until a professor has approved it.

Step #4. Research like a Machine

- Find sources.
- Make personal copies of all sources.
- Annotate the material.
- Decide if you're done. (If the answer is "no," loop back to #1.)

Step #5. Craft a Powerful Story

- There is no shortcut to developing a well-balanced and easy-to-follow argument.
- Dedicate a good deal of thought over time to getting it right.
- Describe your argument in a topic-level outline.
- Type supporting quotes from sources directly into your outline.

Step #6. Consult Your Expert Panel

- Before starting to write, get some opinions on the organization of your argument and your support from classmates and friends who are familiar with the general area of study.
- The more important the paper, the more people who should review it.

Step #7. Write Without the Agony

- Follow your outline and articulate your points clearly.
- Write no more than three to five pages per weekday and five to eight pages per weekend day.

Step #8. Fix, Don’t Fixate

- Solid editing requires only three careful passes:
  - The Argument Adjustment Pass: Read the paper carefully on your computer to make sure your argument is clear, fix obvious errors, and rewrite where the flow needs improvement.
  - The Out Loud Pass: Carefully read out loud a printed copy of your paper, marking any awkward passages or unclear explanations.
  - The Sanity Pass: A final pass over a printed version of the paper to check the overall flow and to root out any remaining errors.

Part 29: Parenting.

Step 195-What Should I Do As Parent

1. **Train My Children on:**
    - **Deep Work.**
    - **UltraLearning.**
    - **Classical Education.**
    - **Christian Doctrine.**
    - **Apologetics: why and what we believe.**
    - **Philosophy.**
    - **Logic, Arguments, EvidenceThinking.**
    - **Reading.**
    - **Talking, Communication.**
    - **Always Raise Question. Never Let Anybody to Tells you cannot raise question and just Believe.**
    - **Worldview and Science and Art.**
    - **Understanding About The World.**
    - **Language.**
    - **Stoicism.**
    - **History.**
    - **How Propaganda Works.**
    - **Reality of The World.**
    - **Situational Awareness and Aware of Surroundings, Self Defence**
    - **Not To be naive.**
    - **Tactics**
    - **Sport.**
2. **If the child asks why the moon is round. The Usual Adult answer is to discourage the child, what shape did you expect the moon to be? Instead of saying that, say to the child that this is interesting question, let's try to find out answer or maybe nobody knows the answer, and when you grow up you will be able to discover the answer, it would be very healthy for human species, if there were less discouragement and more scientists.**
3. **If the Kids wants a leverage to negotiate with me with anything they want. The Currency is Pages you read per day. It does not matter, if we are on vacation, it it is Saturday or Sunday, the kids are always required to Read 20 Pages, every day.**

That Starts at the age of Six. When the child turns six in the family, everyday reads 20 pages

4. **Children are our first responsibility to teach them those things that They would not loose, when they go to School or University.**
5. **I am as father need to provide leadership to my child at home.**
6. **As Family Needs to involve in discipleship ministry.**
7. **Introduce Alexandra and Adelina to Good Literature:**
    - **Have A Deep Literature Hour with Both of them**
8. **When Reading with Alexandra and Adelina, ask Question:**
    - **What, who, when, where, why, How**
    - **What does the text Says?**
    - **What does the author mean based on text?**
    - **Lets try to find what does the author mean by writing this**
    - **Use Rules of Reading.**
9. **Spend Time with Each Child One on one. One of the best Conversation are on one on one.**
10. **Balance between competition and teamwork. Let the Kids have competition, but also let them learn to work as team.**
11. **Teach Children to Debate with each other**
12. **Teach The Children Independence.**
13. **User Very rarely the Card *I Said So***
14. **Choose The Right Movies with Lesson Behind.**
15. **Create A Currency For Your Kids In The House. What is valuable for them to get in return from you, for what they want. The chores are what they supposed to do it. You do not get currency on Chores. The currency is like they need to read a book, exercise. Ask how many pages they finished, they answer is 20, perfect 20 points. If you want to watch TV you need to get 200 points, this means read 200 pages.**
16. **Never compare Kids with other Kids. Compare the way they behave Yesterday and Today.**
17. **Ask Your Kids for Their Opinion**
18. **Discipline:**
    - **Read 20 Pages a day every day and Discuss..**
    - **Watch Documentaries and Discuss.**
    - **If you want to have phone, you have to get straight A and B.**

- **Let the children play iPad, only Saturday and Sundays, but if the child misbehave then no Ipad, No Phone**

Step 196-You Have Required To Do The Work

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.
6. Do not read the newest books, but the great books of western world, stoic and classics, as these books stood the test of time.
7. Do Not Have the Opinion and do not make any judgement about Anything, I see and hear, If I did not work Hard to have an opinion. I need to Read, Analyse, Research the topic from every angle, so that I can have an opinion or Make Judgement on the topic.

8. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

9. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

10. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

11. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

12. When Dialogue, Discussion, Debate Takes A Place.

A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.

- Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
- Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
- Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 197-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

Part 30: Sales.

Step 198-Books On Sales

1. **Listen, Follow And Apply Rules of Reading Part 1 to 22, before looking into Sales.**
2. **Listen, Follow and Apply the following Books.**
    A. Socratic Selling.
    B. 13 Things Mentally Strong People Don't Do.
    C. The 80/20 Principle By Richard Koch.
    D. Eat That Frog By Brian Tracy.
    E. How To Speak How To Listen by Mortimer Adler.
    F. How To Sell When Nobody's Buying by Dave Lakhani.
    G. How To Sell Yourself by Arch Lustberg,
    H. How to Talk TO Anyone.
    I. 80/20 Sales and Marketing by Perry Marshall.
    J. Pareto's 80/20 Rule for Corporate Accountant.
    K. The Ultimate Sales Machine By Chet Holmes.
    L. Seven Habits of Highly Effective People.
    M. 80/20 Investor,
    N. The 80/20 Principle
    O. Challenger Sale
    P. SaLES bIBLE
    Q. Art of Closing Sale
    R. PSYCHOLOGY OF SALES
    S. uNLIMITED sales Success.

3. Take 4 subjects: a. Sales, b. Negotiations c. Human Nature d. Money. Take a list from. Amazon with 4stars and above and read every books on those topics. For 2 years obsess over doing that and you will go farther in the market place. Market reward the people who outworks and improve.

Step 199-You Have Required To Do The Work

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.
5. Be informed citizen is read more classical books and history. This unfolds how the real world works and where it is going. If You read Classical Books, then you can well predict what would happen next in the future based on the events happening.
6. Do not read the newest books, but the great books of western world, stoic and classics, as these books stood the test of time.
7. Do Not Have the Opinion and do not make any judgement about Anything, I see and hear, If I did not work Hard to have an opinion. I need to Read, Analyse, Research the topic from every angle, so that I can have an opinion or Make Judgement on the topic.

8. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

9. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

10. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

11. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

12. When Dialogue, Discussion, Debate Takes A Place.

A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.

- Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
- Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
- Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 200-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.
IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.
V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.
VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.
VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.
VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

Step 201-Use Thinking, Logic, Mental Tools, Thinking Tools.

1. **Go to the Rules of Reading** Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study
2. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Part 31: Situational Awareness.

Step 202-Books On Situational Awareness

1. **Listen, Follow And Apply Rules of Reading Part 1 to 22, before looking into Situational Awareness.**
2. **Listen, Follow and Apply the following Books.**
   A. Hindsight 23 situational awareness.
   B. 80/20 Principle.
   C. Eat that frog.
   D. How to speak how to listen.
   E. Situational awareness Matters.
   F. Advanced situational awareness.
   G. Situational awareness.
   H. **The ultimate situational survival guide _ self-reliance strategies for a dangerous world**

Step 203-You Have Required To Do The Work

1. When Give Opinion on Anything, Do Not Be so Angry and Mean to Others.
2. People Need To Stop Doing By Coming Unprepared To Give Opinion On Any Subject, Without Having Good Idea Of The Literature, and Arguments Written on Topic and Theme Available To Them. The people coming unprepared and not doing any Hard Work To Have an Opinion On The Subject or Topic. When People Coming Overconfidence, which could be resulting in Lack of Preparation, Which Could Lead That Your Position can be Destroyed with Ease. They simply won't do the work required. It's easy to come home, sit on the couch, watch TV, and zone out until bedtime rolls around. But that's not going to help you get smarter.
    A. People Who Do Not Put The Required Work: The first thing they always do is tell you what they think. When someone has an opinion about everything, they want to share it with you. They often tout stats and research as if they had an imaginary checklist of facts they need to be able to rattle off to establish themselves as an expert in a field they actually know very little about. Because they have an opinion on everything, they are quick to judge others – for their lack of opinions, for their lack of knowledge, for their lack of outrage, and the list goes on.
    B. People who have opinions about everything barf so much noise that it's hard to find the signal. Your brain has to work overtime to figure out if they did the work to come up with their opinions themselves or if they're simply regurgitating some oped in a newspaper. Over time, opinionated people also end up in their own prisons and they try to take you with them.
    C. The problem comes from how we see the world. Our opinions are often rooted in how we think the world should work, according to our morals, values, and principles. If we see the world through the lens of our opinions, much of what happens will not agree with us. This is feedback, and how we respond to this feedback is key.

3. How to Get Smarter Read. A lot.Warren Buffett says, “I just sit in my office and read all day.”What does that mean? He estimates that he spends 80% of his working day reading and thinking. When asked how to get smarter, Buffett once held up stacks of paper and said, “Read 500 pages like this every week. That’s how knowledge builds up, like compound interest.” All of us can build our knowledge, but most of us won’t put in the effort. “Go to bed smarter than when you woke up.”

4. How Long Does it Take To Prepare:
    A. Depend on the topic and opponent, and how much he’s written.
    B. If the opponent nothing published, then there was very little preparation to be made because I simply didn’t know what to expect.
    C. On the other hand, if the opponent has published lots of written work and have some videos. Read and what his written and videos and prepare the summaries articles, videos, and have sense where he is coming from. This can take Weeks or Months.

5. Before Preparation. The difference between the people who do the work and the people who just reel off memorized opinions is huge. When you do the work, you can answer the next question. You know when to follow the rules and when they'll get you in trouble. When I did my postgraduate I was surrounded by people who could answer the test questions. They got good grades — actually, they got *great* grades but an odd thing happened after school: a lot of those people couldn't apply their knowledge to problems they hadn't seen before. They were chauffeurs — they knew the memorized answer. They couldn't answer the next question. We're all chauffeurs in some aspects of our lives. This is why understanding your circle of competence is so critical to living a rational life.
    I. Circle of Competence:
        A. **Circle Of Competence**-Understanding my Circle of Competence helps to avoid problems, identify opportunities for improvement and learn from Others. Circle of Competence is simple: Each of us, through experience or study, has built up useful knowledge on certain areas of the world. Some areas are understood by most of us, while some areas require a lot more specialty to evaluate. For example, most of us have a basic understanding of the economics of a restaurant: You rent or buy space, spend money to outfit the place and then hire employees to seat, serve, cook, and clean. (And, if you don't want to do it yourself, manage.) From there, it's a matter of generating enough traffic and setting the appropriate prices to generate a profit on the food and drinks you serve—after all of your operating expenses have been paid. Though the cuisine, atmosphere, and price points will vary by restaurant, they all have to follow the same economic formula.That basic knowledge, along with some understanding of accounting and a little bit of study, would enable one to evaluate and invest in any number of restaurants and restaurant chains, public or private. It's not all that complicated. Far more important is to honestly define what we do know and stick to those areas. Our circle of competence can be widened, but only slowly and over time. Mistakes are most often made when straying from this discipline.Where should we devote our limited time in life, to achieve the most success? So, the simple takeaway here is clear. If you want to improve your odds of success in life and business, then define the perimeter of your circle of competence, and operate inside. Over time, work to expand that circle

but never fool yourself about where it stands today, and never be afraid to say “I don’t know.”

II. Two Type of Knowledge: The Max Planck and Chauffeur Test

A. The Two Types of Knowledge: The Max Planck and Chauffeur Test: How to distinguish between the two types of knowledge: real knowledge and pretend knowledge.

- The first type of knowledge is real. It can’t be bought. It can’t be copied. If you want real knowledge you need to earn it. One is Planck knowledge, the people who really know. They’ve paid the dues, they have the aptitude. You are going to have the problem in your life of getting the responsibility into the people with the Planck knowledge and away from the people with the chauffeur knowledge. Real knowledge comes when people do the work. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.

- The second type of knowledge is copied. On the surface you know the answer but you lack the understanding to show your work. Then we’ve got chauffeur knowledge. They’ve learned the talk. They may have a big head of hair, they may have fine temper in the voice, they’ll make a hell of an impression. But in the end, all they have is chauffeur knowledge. I think I’ve just described practically every politician in the United States. We have the people who don’t do the work — they pretend. While they’ve learned to put on a good show, they lack understanding. They can’t answer questions that don’t rely on memorization. They can’t explain things without using jargon or vague terms. They have no idea how things interact. They can’t predict the consequences. The problem is that it’s difficult to separate the two. This is the Batesian Mimicry problem. One way to tease out the difference between Planck and chauffeur knowledge is to ask them why.
- How To Distinguish Real Knowledge and Fake Knowledge. With journalists, it is more difficult. Some have acquired true knowledge.

Often they are veteran reporters who have specialized for years in a clearly defined area. They make a serious effort to understand the complexity of a subject and to communicate it. They tend to write long articles that highlight a variety of cases and exceptions. The majority of journalists, however, fall into the category of chauffeur. They conjure up articles off the tops of their heads or, rather, from Google searches. Their texts are one-sided, short, and— often as compensation for their patchy knowledge. The same superficiality is present in business. The larger a company, the more the CEO is expected to possess “star quality.” Dedication, solemnity, and reliability are undervalued, at least at the top. Too often shareholders and business journalists seem to believe that showmanship will deliver better results, which is obviously not the case.One way to guard against this is to understand your circle of competence. Dobelli concludes with some advice worth taking to heart. Be on the lookout for chauffeur knowledge. Do not confuse the company spokesperson, the ringmaster, the newscaster, the schmoozer, the verbiage vendor, or the cliché generator with those who possess true knowledge. How do you recognize the difference? There is a clear indicator: True experts recognize the limits of what they know and what they do not know. If they find themselves outside their circle of competence, they keep quiet or simply say, “I don’t know.” This they utter unapologetically, even with a certain pride. From chauffeurs, we hear every line except this.

III. Batesian Mimicry Problem. Batesian Mimicry: Why Copycats Are Successful. Mimic and the Real Thing:

A. “There’s two kinds of snakes you come across. There’s the Texas Coral Snake, and the Mexican Milk Snake, and they both look exactly alike. The Texas Coral Snake is dangerous, it’s venomous, it can kill you in a minute. The Mexican Milk Snake can’t do anything to you; it’s an impostor.”How is it that these two look alike? It’s due to a phenomenon called Batesian Mimicry.

B. In the 1850s, the naturalist Henry Walter Bates found a certain set of butterflies who were clearly *not* of the same species but whose wings looked almost the same to the naked eye. After thinking it over, Bates eventually figured out what was going on: While the butterflies which were toxic to potential predators (the “models”) were able to operate freely and relatively unmolested, there had also developed a “mimic” population of butterflies which wasn’t toxic at all, yet still went untouched! In fact, biologists eventually figured out that the more toxic and dangerous the “model” was and the more frequently they appeared in the local population, the easier it was for its “mimics” to get by! Predators simply wouldn’t take the risk of mixing up the two. If there aren’t as many “models” around or they aren’t that dangerous, the mimics have a harder time.

C. This is a wonderful model, and in the practical world we live in, a similar phenomenon abounds: Copycats or “pretenders to the throne” are often *very* effective, very convincing “mimics” of the true champions. They dress the part, they talk the talk, and they know what buttons to push. But in the end, they are merely chauffeurs.We see a *very* Batesian effect at work: The more impressive the “model,” the more effective its mimics can be in convincing people they too are impressive, and in all the same ways. But for every Warren Buffett (just one by our count), there has been many “future” Warren Buffett’s. For every Steve Jobs, there have been many “next” Steve Jobs’.In fact, sometimes even just *appearances* can be quite convincing: now-disgraced Theranos founder Elizabeth Holmes was very fond of wearing a very Steve Jobsian black turtleneck outfit. Because they can be very convincing, we must be wise enough to watch out for Batesian mimicry

— even in ourselves. This brings up an interesting, at times paradoxical, question: Who can best tell the difference between a Coral Snake and its Mimics? The Coral Snake itself. The real thing knows a fake. It's worth taking the time to work on learning *all* the big ideas you can find, not just the ones you want to learn. In that search, you'll find a host of big winners you didn't even know existed.

6. Preparation:
    A. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it?
        I. I have to do the reading.
        II. I have to talk to competent people and understand their arguments.
        III. Never try to be biased toward any of the side, but question both side of the argument.
        IV. Do not support any side, until all the facts are put out there, clear and obvious.
        V. Once known all the facts then analyse both sides of the argument like William Lane Craig.
        VI. I have to think about the key variables and how they interact over time.
        VII. I have to listen and chase down arguments that run counter to your views.
        VIII. I have to think about how you might be fooling yourself.
        IX. I have to see the issue from multiple perspectives.
        X. I have to think.
        XI. I need to become your most intelligent critic and have the intellectual honesty to kill some of your best-loved ideas.
        XII. Be honest with yourself and open minded. ANALYSE both side of the argument logically and see which is true logically. Means has the clear terms, premises are true, and conclusion follows from premises.
        XIII. Never say your opinion about anything that requires the analysis of the arguments and facts. Work very bery hard to have an opinion about anything.
        XIV. Listen very carefully other side and use ancient method *state the opposition argument in my own words and ask him/her if the argument I

stated in my own words represents correctly their argument and if I UNDERSTOOD Correctly their arguments.

XV. Never use cheap shots to win argument, like logical fallacies.

XVI. Debate and discussion is not about just win at any cost, but let other person to think about your arguments and engage with them. Second reason never use in discussion cheap shots toward other person, but be civil. Third reason is win the debate and discussion. Fourth is find the truth.

B. For Affirmative and Negative Case:

I. Read, analyse, Research, Syntopicon and Investigate Published Work.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments

II. Read Opponents Books, Articles, Newspapers, Blogs.Reading Published work. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of opponent Arguments.

III. Watch Video. Watching Videos of the opponent. What objections he would raise against the topic and prepare the responses for each of these points.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

IV. Listen The recording that the opposition made, in which he addresses these issues.
   - Listen, Use And Apply Rules of Reading Methods Every Steps.
   - Use Grammar in Rules of Reading.
   - Use Logic In Rules of Reading.
   - Investigate Line of logic of My own Arguments.

V. Talk with People who are students in his class, who can tell me, privately, insights into his thinking and character.

VI. If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”

VII. Another way to get smarter, outside of reading, is to surround yourself with people who are not afraid to challenge your ideas. “Develop into a lifelong self-learner through voracious reading; cultivate curiosity and strive to become a little wiser every day.”

7. Compound Knowledge- Are The Resources I will Choose Concentrating On the Expiring Information or Compound Knowledge?
    I. Are on the Resources providing expiring information?
        A. Will you care about what you're reading in a month? In a year? In five years?
        B. Are you focused enough on the same thing to build cumulative knowledge or are you too spread out?
        C. What do you spend time on that's likely to change in the next few years? What's not likely to change?
        D. What would need to happen for you to stop outsourcing organisation of information to the computer?
    II. Signs of The Information in the resources are expiring
        A. First, it's marketed to you.
        B. Second, lacking details and nuance, it's easily digestible. This is why it's commonly telling you what happened, not why it happened or under what conditions it might happen again
        C. Third, it won't be relevant in a month or a year. Expiring information is <u>one reason</u> I stopped reading most news. It's <u>a false map</u>.
    III. While most of us focus on consuming information that we won't care about next month, let alone next year, focus on knowledge and companies that change very, very slowly or not at all. And because the information he was learning changed slowly he could compound his knowledge over time.
    IV. Doing his own thinking and vacuums up the details. When we don't think for ourselves it's easy to put the blame on someone else, to "pass the buck" so to speak.
    V. When we consume information that doesn't expire or expires slowly; is very detailed; and we spend time thinking about it not passing the buck, we can match patterns. This is how you learn to see what other people are missing. The longer you do this, the more advantage you get.
    VI. Just like the rest of us, Buffett's dependent on information and knowledge to make great decisions. Unlike most of us, he has a great memory—perhaps because he's not trying to outsource his memory or thinking to others.
    VII. A lot of what the snowball is about the concept of learning, and creating, and the advantage of having the information and knowing it. When I came here today one

of the things that I was thinking is that what you do is so much at the intersection, because retrieving information is different from having it already in your head.

VIII. What you do is different. You work on manipulating how you use the information. In fact, Warren Buffett and Charlie Munger have the files in their head. That's why they aren't really out there googling all the time looking for, trying to look stuff up, because they already know it.

IX. I think a lot of the work that you do here is helpful to the ordinary person, but Warren Buffett or Charlie Munger don't need it. At the same time, the lesson that they have, which is that learning yourself, making yourself as smart as you can is extremely valid, and not just relying on a library where you can look something up all the time, because a lot of times when you need to make a decision, and you need 50 pieces of information, you need to know it then.

8. The Art of Anticipation of Objections.
    A. Analyse My Arguments, and Scrutinise The arguments by using Rules of Reading.
    B. Analyse the arguments of the opponent. Scrutinise Their arguments by using Rules of Reading.
    C. Analyse My own arguments. Scrutinise My own arguments, and the potential Loopholes in the argument by Use Rules of Reading.
    D. Use Think, Logic, Strategem, Thinking models.
    E. Write.
    F. Prepare The responses to anticipated objections that, I think the opponent will bring up.
    G. Be intellectually Prepared. This means That I need to know my arguments, so well, that nothing new can surprise me. I would also invest lots of time in knowing and know better opposite side arguments. I would read both side of the arguments, and work Hard on analysing the arguments and evidence of both sides. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey. While we all hold an opinion on almost everything. Have I do the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don’t know the other side’s argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, “I don’t have an opinion on that; why don’t you tell me how you got to have such a firm one? It sounds like I could learn something.”
    H. Doing the work required to hold an opinion means you can argue against yourself better than others can. Only then can you say, “I can hold this view because I can’t find anyone else who can argue better against my view.” Great thinkers, like Charles Darwin, did the work. And it’s one of the biggest reasons he’s buried at Westminster Abbey.
    I. Doing the work counteracts our natural desire to seek out only information that confirms what we believe we know. When Darwin encountered opinions or facts that ran contrary to his ideas, he endeavored not only to listen but also not to rest

until he could either argue better than his challengers or understand how the fact fit. Darwin did the work. It's wasn't easy, but that's the point.

J. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position, This leads to the True Confidence.

K. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of view, then the world becomes your library to help you to become better at the craft.

L. I Always need to ask myself: Have I done the work required to have an opinion on any Subject? Never allow myself to have an opinion on anything that I don't know the other side's argument better than they do. The work required to have an opinion is very hard part, have I avoid it? If that sounds like a lot of work, just say, "I don't have an opinion on that; why don't you tell me how you got to have such a firm one? It sounds like I could learn something."

M. I might need to Suspend my judgement and tell them that I do not have an opinion on this specific Topic.

N. Never Under Prepare, but Vastly Over Prepare for the Opponent and their arguments and responses

O. Spend years in preparation, take debate class at the college or university. You need to participate in debates. You need to have mock debates, where someone play role of your opponent, and then you respond to them. You need to do reading and learn how to flow the debates. How to construct affirmative case and negative case. You need to take time to prepare and have enormous preparation.

P. Memorize the arguments for my case

9. When Dialogue, Discussion, Debate Takes A Place.
    A. As Affirmative Speaker, you need to present Prima Facie Case for proposition that is under debate. Prima Facie Case will be one that will establish the truth of proposition you are defending. If I am defending proposition that God Exist, I will want to give 3-5 arguments leading to that Conclusion, that God Exists, and then I will lay those out with great clarity in my opening speech, and say this is the groundwork for the debate. I am not interested in talking about other issues for example if Christianity bad for society Then, I come back to those in every speech over and over again. The goal is to make opponent argue on your grounds. You do not go over to his grounds, and let your audience forget, your affirmative case, rather you reorganise opponent speech, so that you answer his objections in so far as they reply to your arguments, so you may answer them in a very different order than he gave them, because you will be seeing for example: now what answer or response did he have to the cosmological argument, I see two basic responses and then you deal with them.
        - Make Briefs, where I have suitable objection, and then have two or three responses to those objections.
        - Use The Brief During Exchange with the Opponent. File these Briefs into Folders, and spread These Manila Folders out in front of me on Desk, When I am interacting with the Opponent. Once the opponent Rises his point I just pull These briefs from these folders and never have to think on my feet because I am completely prepared. Key is never have to think on the feet to be so well prepared, that I would have my responses ready for anything he brings up.
        - Quote Peer Review Scientific Articles on the topic in support the conclusions.

B. Take Notes While the Opposition is speaking:
    - How To Take Notes- Flow Chart. By Taking Notes, I am sure that I am responding to my opponent's arguments and everything he brings up.
        I. Make 11-12 Columns on the Pad.Prepare the left column in advance of the communication, debate. The Left Column needs to be filled in, if you starting first. If not, then leave left column as blank.
        II. First Left Hand Column Are My Arguments.
        III. Second Left Hand Column are Opposition Arguments and Responses to My arguments.
        IV. Third Left Column are My Responses to the Opponent responses.
        V. Fourth Left Hand Column are My Rebuttal.
        VI. Fifth Left Hand Column are Opponent Rebuttal.
        VII. Sixth Left Hand Column are my Responses to the Opponent rebuttal.
        VIII. Seventh Left Hand Column is the Final My Rebuttal.
        IX. Eight Left Hand Column is The opponent Rebuttal.
        X. Ninth Left Hand Column is my closing statements.
        XI. Tenth Left Hand Column is the opponent closing statements.
        XII. Eleventh Left Hand Column is the Cross Examination.
            - My Answer.
            - Opponent Answer.
            - My response to the response of the opponent.

C. Always Remind the audience what are your three to five arguments and what are the responses of the opponent, if any to your arguments.

D. Always allow the opponent allow to lay out his argument without interruption.

E. Take the opponent arguments and put in my own words and correctly represent their argument carefully without misrepresentation.

F. Be Honest.

G. Be Open Minded.

H. Always from Your side be honest and rigorous exchange of arguments and counter Arguments from which me and opponent would benefit.

I. One of good technique is whenever you can quote an opponent against himself, this is powerful device. Have the manuscript, point to the footnote, cite the book, and the quotation and have the page number.

J. Never Take Cheap Shots at the Opponent.

K. Encourage not just trust someone say so, but demand published peer reviewed articles in support of the positions that one take

L. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

Step 204-Letting The World Do The Work For You

1. Listen and Apply book
    I. This Explains Everything_ Deep, Beautiful, and Elegant Theories of How the World Works
2. **The world never tells you that you're wrong; it only gives you outcomes.**
3. **Don't force. Don't resist. Have a beginner's mind. Let the world teach you.**
4. **Reality will do a lot of the work for us if we simply align with it. Most of the time we're simply adding friction because we want the world to work in the way we think it should.**
5. **If you don't see the world the way it is, you'll think it works in a way that it doesn't and make terrible mistakes. The key to getting what you want out of life is to identify how the world works and align yourself accordingly. This is hard because we think the world should work the way we see it. The word "should" is important. Because we think the world should work in a way that it doesn't, our approach is suboptimal. What the pupil must learn, if he learns anything at all, is that the world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities. If we do not let the world teach us, it teaches us a lesson. Joseph Tussman**
6. When an outcome is not what you want it to be, things get tough. You can ignore the result and continue to think that you're right. This protects your ego. It also carries the risk of your continuing to believe something that isn't true. Alternatively, you can calibrate your believability on the subject at hand by lowering the odds that you're right. For example, maybe you gave yourself an 85 out of 100 for the ability to hold a firm opinion on this subject, and now you lower your score to 75. If the world continues to provide undesirable outcomes, eventually you get the hint and change your beliefs. Finally, you can give up your opinions and just respond to the world as it is. This option is the hardest.
7. You do not create the way the world works, you can only align yourself with it. It takes a lot of work to align ourselves with reality. When we don't get the outcome we're seeking, the last place we look is inside ourselves. Instead, we blame others or

circumstances. If you want to align yourself with reality, you have to work at it and care about it. There are two keys to aligning yourself with how the world really works: accepting feedback and stopping bargaining.

I. We let people, not results, guide our behavior. The world tries to tell us when we don't see it the way it is. The problem is we don't listen to the world. Instead, we let others tell us what's right and wrong, what works, and what doesn't. Common actions get common results. Most of our actions come from others. We want what they want. Even worse, we employ the same actions to get it. This isn't always wrong. If you're just starting, the quickest path to average is to copy. If you want better results than average, you're going to have to iterate. Doing something different means we might look like a fool, and we do not want to look like a fool. Iterating means trying something new, it means you might fail. Show me a person who's afraid to look bad, and I'll show you a person you can beat every time. If we do what everyone else is doing, we're going to get the same results that everyone else is getting. Different results demand different actions. If you can't really fail, you can't really succeed. Let results, not popularity, determine your actions. If you're doing something that doesn't get you the results you want, try something new. If you're doing something that seems to work, keep doing it. Consistently repeat successful actions.

II. Bargaining with the world doesn't work. A lot of otherwise smart people know what they're doing isn't getting the results they want, but because they think the world *should* work in a way that it doesn't, they keep repeating them hoping for different results. If you are this person, see it for what it is, and change your actions. The feedback from the world is often painful. Often, it is this very pain that causes us to no longer delude ourselves with how the world should work and accept how it does work. If you can learn to accept the world for how it is, before suffering, you'll go faster and further. Outcome over ego. If you think you know how the world works but you're doing something that gets suboptimal results because it *should* work a different way, you don't really know how the world works. Rational people take feedback from the world. If you want to know how someone sees the world, look at their actions. In the end, it's all your fault. You are accountable for your outcomes. When you take responsibility for your outcomes, you naturally accept feedback from reality. When you get feedback from reality, you adjust your behavior.

III. As Per Kobe Bryant statement: Trivial things should not be taken your attention. The attentions should be focused on things that is very important. Anything outside of the most important things in life, you should not have time for. You Should love the challenge in life, and always be curious, if you can be at the top , as these greats in that area. Always focus on one thing and not multiple things, this gives an edge and advantage over other people, who focusing on multiple things in life. The World Becomes a library to you, to be better at your craft.: Everything you see whether TV show I saw, Books, Journals, I read, whether discussion, debate I listen, people I talk to. Everything was done to try to learn to become better at the craft your focusing. When you have this point of you, then the world becomes your library to help you to become better at the craft.

IV. Have the best work ethic on daily basis. This is everyday process, and try to figure it out, the strengths and weaknesses of my position and opposing person position.

V. Always look at the reality of the situation, and do not let the emotion cloud the situation and the execution. Always be in the present and the moment.

VI. If you understand the world as it really is, not as you'd wish it to be, you will begin to make better decisions almost immediately. Once you start making better decisions the results compound. Better initial decisions free up your time, reduce your stress, allowing you to spend more time with your family and leave your competition in the dust.

VII. How can we best understand the world as it is? Acquiring knowledge can be a very daunting task. If you think of the mind as a toolbox, we're only as good as the tools at our disposal. A carpenter doesn't show up to work with an empty toolbox. Not only do they want as many tools in their toolbox as possible, but they want to know how to use them. Having more tools and the knowledge of how to use them means they can tackle more problems. Try as we might, we cannot build a house with only a hammer. If you're a knowledge worker, you're a carpenter. But your tools aren't bought at a store and they don't come in a red box that you carry around. Mental tools are the big ideas from multiple disciplines, and we store them in our mind. And if we have a lot of tools and the knowledge required to wield them properly, we can start to synthesize how the world works and make better decisions when confronted with problems.

VIII. This is how we understand and deal with reality. The tools you put into your toolbox are Mental Models. Mental models are a framework for understanding

how the world really works. They help you grasp new ideas quickly, identify patterns before anyone else and shift your perspective with ease. Mental Models allow us to make better decisions, scramble out of bad situations, and think critically. If you want to understand reality you must look at a problem in multiple dimensions — how could it be otherwise? Getting to this level of understanding requires having a lot of tools and knowing how to use them. You knew there was a hitch right? We need to change our fast-food diet of information consumption and adopt the healthier diet of knowledge that changes slowly over time. While changing diets isn't easy, it can be incredibly rewarding: more time, less stress, and being better at your job. The costs, however, are short term pain for long-term gain. You must change how you think.

IX. 2nd Order Thinking. One example of a model we can immediately conceptualize and use to improve our ability to make better decisions is something we can borrow from ecology called second-order thinking. The simple way to conceptualize this is to ask yourself "If I do X, what will happen *after* that?". I sum this up using the ecologist Garrett Hardin's simple question: "*And then what?*" A lot of people forget about higher order effects — second and third-order effects or higher. I've been in a lot of meetings where decisions are made and very few people think to the second level, let alone the third. Rather, what typically happens is called first conclusion bias. The brain shuts down and stops thinking at the first idea that comes to mind that seems to address the problem as you understand it. We don't often realize that our first thoughts are usually not even our own thoughts. They usually belong to someone else. We understand the sound-byte but we haven't done the hard work of real thinking. After we reach the first conclusion, our minds often shut down. We don't seek evidence that would contradict our conclusion. We don't ask ourselves what the likely result of this solution would be — we don't ask ourselves "And then what?" We don't ask what other solutions might be even *more* optimal. For example, consider a hypothetical organization that decides to change their incentive systems. They come up with a costly new system that requires substantial changes to the current system. Only they don't consider (or even understand) the problems that the *new* system is likely to create. It's possible they've created more problems than they've solved – only now there are *different* problems they must put their head down to solve. Optically, they "reorganize their incentive programs," but practically, they've simply expended energy to stay in place. Another, perhaps more complicated,

example is when a salesman comes into a company and offers you a software program he claims will lower your operating costs and increase your profits. He's got all these beautiful charts on how much more competitive you'll be and how it will improve everything. This is exactly what you need because your compensation is based on increasing profits. You're sold. Then second-order thinking kicks in and you dare to ask how much of those cost savings are going to go to you and how much will eventually end up benefits enjoyed by customers? To a large extent, that depends on the business you're in. However, you can be damn sure the salesman is now knocking on your competitor's door and telling them you just bought their product and if they want to remain competitive they better purchase it too. Eventually, you all have the new software and no one is truly better off. Thus, in the manner of a crowd of people standing on their tip-toes at a parade, all competitors spend the money but none of them win: The salesman wins and the customer wins. We know, thanks to people like Garrett Hardin, Howard Marks, Charlie Munger, Peter Kaufman, and disciplines like ecology, that there are second and third-order effects. This is how the world really works.It just isn't always a comfortable reality. Understanding how the world works isn't easy and it shouldn't be. It's hard work. If it were easy, everyone would do it. And it's not for everyone. Sometimes, if your goal is to maximize utility, you should focus on getting very, very good in a narrow area and becoming an expert, accepting that you will make many mistakes outside of that domain. But for most, it's extremely helpful to understand the forces at play outside of their narrow area of expertise. Because when you think about it, how could reality be anything other than a synthesis of multiple factors? How could it possibly be otherwise?

X. When our mental models line up with reality, they help us avoid problems. However, they also cause problems when they don't line up with reality as we think something that isn't true.

XI. We must be open to other perspectives if we truly want to understand the results of our actions. Despite feeling that we've got all the information, if we're on the ship, the fish in the ocean has more he can share. The second flaw is ego. Many of us tend to have too much invested in our opinions of ourselves to see the world's feedback—the feedback we need to update our beliefs about reality. This creates a profound ignorance that keeps us banging our head against the wall over and over again. Our inability to learn from the world because of our ego happens for many reasons, but two are worth mentioning here. First, we're so

afraid about what others will say about us that we fail to put our ideas out there and subject them to criticism. This way we can always be right. Second, if we do put our ideas out there and they are criticized, our ego steps in to protect us. We become invested in defending instead of upgrading our ideas. The third flaw is distance. The further we are from the results of our decisions, the easier it is to keep our current views rather than update them. When you put your hand on a hot stove, you quickly learn the natural consequence. You pay the price for your mistakes. Since you are a pain avoiding creature, you update your view. Before you touch another stove, you check to see if it's hot. But you don't just learn a micro lesson that applies in one situation. Instead, you draw a general abstraction, one that tells you to check before touching anything that could potentially be hot. Organizations over a certain size often remove us from the direct consequences of our decisions. When we make decisions that other people carry out, we are one or more levels removed and may not immediately be able to update our understanding.

Step 205-Use Thinking, Logic, Mental Tools, Thinking Tools.

1. **Go to the Rules of Reading** Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study
2. Listen, Follow and Apply **Thinking, Logic and Mental Model PART 7**

Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study

1. **Step 57- Slow Down. Pages 1058-1060.**
2. **Step 58- NOT MULTITASK. Pages 1061.**
3. **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
4. **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
5. **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
6. **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
7. **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**
8. **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
9. **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
10. **Step 66-Journaling. Pages 1296.**
11. **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
12. **Step 68-Journaling. Pages 1303.**
13. **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

Part 32: Pareto Principle, Vital Few and Trivial Many or 80/20 Principle

Step 206-80/20 Principle

80/20 Principle or Pareto Principle

General Information About 80/20 Principle

1. **Books On The 80/20 Principle:**
    I. **Eat That Frog.**
    II. **The 80 20 principle.**
    III. **80/20 sales and marketing.**
    IV. **Pareto's 80 20 Rule for Corporate Accountants.**
    V. **The 80_20 investor _ investing in an uncertain and complex world -- how to simplify investing with a single principle.**

2. **DEFINITION OF THE 80/20 PRINCIPLE: The 80/20 Principle states that there is an inbuilt imbalance between causes and results, inputs and outputs, and effort and reward. Typically, causes, inputs, or effort divide into two categories:**
    I. **The majority, that have little impact. This means 80% inputs will result in 20% outputs**
    II. **A small minority, that have a major, dominant. This means 20% inputs will result in 80% output.**
    III. **80 percent of outputs result from 20 percent of inputs; that 80 percent of consequences flow from 20 percent of causes; or that 80 percent of results come from 20 percent of effort.**
    IV. **Once you Find Out, what is 20% input that gives 80 of Output. Then You need to Put 100% effort into those 20% inputs, to achieve the best results.**

3. **The 80/20 Principle asserts that when two sets of data, relating to causes and results, can be examined and analysed, the most likely result is that there will be a pattern of imbalance. The imbalance may be 65/35, 70/30, 75/25, 80/20, 85/15, 90/10, 95/5, or 99.9/0.1, or any set of numbers in between. However, the two numbers in the comparison don’t have to add up to 100. Example: Two**

economists have just made a study of the revenues and lifespans of 300 movies released over an 18-month period. They found that four movies—just 1.3 percent of the total—earned 80 percent of box office revenues; the other 296 movies or 98.7 percent earned only 20 percent of the gross. So movies, which are a good example of unrestricted markets at work, produce virtually an 80/1 rule, a very clear demonstration of the principle of imbalance.

4. **The 80/20 Principle can and should be used by every intelligent person in their every area of daily life, by every organisation, and by every social grouping and form of society. It can help individuals and groups achieve much more, with much less effort.**

5. **Understanding the 80/20 Principle gives you great insight into what is really happening in the world around you.**

6. **80/20 Analysis.**

    I. **Traditionally, the 80/20 Principle has required 80/20 Analysis, a quantitative method to establish the precise relationship between causes/input/effort and results/outputs/rewards. This method uses the possible existence of the 80/20 relationship as a hypothesis and then gathers the facts so that the true relationship is revealed. This is an empirical procedure which may lead to any result ranging from 50/50 to 99.9/0.1. If the result does demonstrate a marked imbalance between inputs and outputs (say a 65/35 relationship or an even more unbalanced one), then normally action is taken as a results.**

        - **Precise**
        - **Quantitative**
        - **Requires Investigation**
        - **Provides Facts**
        - **Highly Valuable.**

    II. **80/20 Analysis examines the relationship between two sets of comparable data. One set of data is always a universe of people or objects, usually a large number of 100 or more, that can be turned into a percentage. The other set of data relates to some interesting characteristic of the people or**

objects that can be measured and also turned into a percentage. For example, we might decide to look at a group of 100 friends, all of whom are at least occasional beer drinkers, and compare how much beer they drank last week.

III. **What makes 80/20 Analysis unique is that the measurement ranks the second set of data in descending order of importance and makes comparisons between percentages in the two sets of data. In our example, then, we will ask all our 100 friends how many glasses of beer they drank last week and array the answers in a table in descending order. Shows the top 20 and bottom 20 from the table. 80/20 Analysis can compare percentages from the two sets of data (the friends and the amount of beer drunk). In this case, we can say that 70 percent of the beer was drunk by just 20 percent of the friends. This would therefore give us a 70/20 relationship. Introduces an 80/20 frequency distribution chart (or 80/20 chart for short) to summarise the data visually.**

IV. **Like any simple and effective tool, 80/20 Analysis can also be misunderstood, misapplied, and, instead of being the means to an unusual insight, serve as the justification for conventional thuggery. 80/20 Analysis, applied inappropriately and in a linear way, can also lead the innocent astray—you need constantly to be vigilant against false logic.**

V. **Let me illustrate this with an example from my own new profession, the book trade. It is easy to demonstrate that, in most times and places, about 20 percent of book titles comprise about 80 percent of books sold. For those who are steeped in the 80/20 Principle, this is not surprising. It might seem a short hop to the conclusion that bookshops should cut the range of books they stock or, indeed, that they should concentrate largely or exclusively on "bestsellers." Yet what is interesting is that in most cases, instead of sending profits up, restricting range has sent profits down. This does not invalidate the 80/20 Principle, for two reasons. The key consideration is not the distribution of books sold, but what customers want. If customers go to the trouble of visiting a bookstore, they want to find a reasonable range of books (as opposed to a kiosk or supermarket, where they don't expect range). Bookstores should concentrate on the 20**

percent of customers who account for 80 percent of their profits and find out what those 20 percent of customers want.

VI. **The other reason is that what matters even when considering books (as opposed to customers) is not the distribution of sales—the 20 percent of books that represent 80 percent of sales—but the distribution of profits—the 20 percent of titles that generate 80 percent of profits. Very often, these are not the so-called bestsellers, books written by well-known authors. In fact, a study in the United States revealed that "best sellers represent about 5% of total sales."[5] The true bestsellers are often those books that never make it into the charts but sell a reliable quantity year in and year out, often at high margins. As the same U.S. research comments, "Core inventory represents those books that sell season-in and season-out. They are the '80' in the 80/20 rule, often accounting for the lion's share of sales in a particular subject."**

7. 80/20 Thinking.

I. **A new and complementary way to use the 80/20 Principle is what I call 80/20 Thinking. This requires deep thought about any issue that is important to you and asks you to make a judgment on whether the 80/20 Principle is working in that area. You can then act on the insight. 80/20 Thinking does not require you to collect data or actually test the hypothesis. Consequently, 80/20 Thinking may on occasion mislead you—it is dangerous to assume, for example, that you already know what the 20 percent is if you identify a relationship —but I will argue that 80/20 Thinking is much less likely to mislead you than is conventional thinking. 80/20 Thinking is much more accessible and faster than 80/20 Analysis, although the latter may be preferred when the issue is extremely important and you find it difficult to be confident about an estimate.**

- **Fuzzy**
- **Qualitative**
- **Requires Deep Thought**
- **Provides Insight**

- **Highly Valuable**

II. **80/20 Analysis is extremely useful. But most people are not natural analysts, and even analysts cannot stop to investigate the data every time they have to make a decision—it would bring life to a shuddering halt. Most important decisions have never been made by analysis and never will be, however clever our computers become. Therefore, if we want the 80/20 Principle to be a guide in our daily lives, we need something less analytical and more instantly available than 80/20 Analysis. We need 80/20 Thinking.**

III. **80/20 Thinking is my phrase for the application of the 80/20 Principle to daily life, for nonquantitative applications of the principle. As with 80/20 Analysis, we start with a hypothesis about a possible imbalance between inputs and outputs, but, instead of collecting data and analyzing them, we estimate them. 80/20 Thinking requires, and with practice enables, us to spot the few really important things that are happening and ignore the mass of unimportant things. It teaches us to see the wood for the trees.**

IV. **80/20 Thinking is too valuable to be confined to causes where data and analysis are perfect. For every ounce of insight generated quantitatively, there must be many pounds of insight arrived at intuitively and impressionistically. This is why 80/20 Thinking, although helped by data, must not be constrained by it**

V. **To engage in 80/20 Thinking, we must constantly ask ourselves: Vital Few :what is the 20 percent that is leading to 80 percent? Ask Trivial Many : What is 80 percent that leads to 20 percent. We must never assume that we automatically know what the answer is but take some time to think creatively about it. What are the vital few inputs or causes, as opposed to the trivial many? Where is the haunting melody being drowned out by the background noise?**

    - **Once you Find Out, what is 20% input that gives 80 of Output. Then You need to Put 100% effort into those 20% inputs, to achieve the best results. Additionally Remove Trivial Many.**

8. **Application of the 80/20 Principle implies that we should do the following:**

   I. **Celebrate exceptional productivity, rather than raise average efforts**
   II. **Look for the short cut, rather than run the full course**
   III. **Exercise control over our lives with the least possible effort**
   IV. **Be selective, not exhaustive**
   V. **Strive for excellence in few things, rather than good performance in many**
   VI. **Delegate or outsource as much as possible in our daily lives and be encouraged rather than penalized by tax systems to do this (use gardeners, car mechanics, decorators, and other specialists to the maximum, instead of doing the work ourselves).**
   VII. **Choose our careers and employers with extraordinary care, and if possible employ others rather than being employed ourselves**
   VIII. **Only do the thing we are best at doing and enjoy most**
   IX. **Look beneath the normal texture of life to uncover ironies and oddities**
   X. **In every important sphere, work out where 20 percent of effort can lead to 80 percent of returns**
   XI. **Calm down, work less and target a limited number of very valuable goals where the 80/20 Principle will work for us, rather than pursuing every available opportunity.**
   XII. **Make the most of those few "lucky streaks" in our life where we are at our creative peak and the stars line up to guarantee success.**

9. **Low Value use of Time.**

   I. 1 Things other people want you to do
   II. 2 Things that have always been done this way
   III. 3 Things you're not unusually good at doing
   IV. 4 Things you don't enjoy doing
   V. 5 Things that are always interrupted
   VI. 6 Things few other people are interested in
   VII. 7 Things that have already taken twice as long as you originally expected.
   VIII. 8 Things where your collaborators are unreliable or low quality
   IX. 9 Things that have a predictable cycle

10. High Value use of Time

I. 1 Things that advance your overall purpose in life
II. 2 Things you have always wanted to do
III. 3 Things already in the 20/80 relationship of time to results
IV. 4 Innovative ways of doing things that promise to slash the time required and/or multiply the quality of results
V. 5 Things other people tell you can't be done
VI. 6 Things other people have done successfully in a different arena
VII. 7 Things that use your own creativity
VIII. 8 Things that you can get other people to do for you with relatively little effort on your part
IX. 9 Anything with high-quality collaborators who have already transcended the 80/20 rule of time, who use time eccentrically and effectively
X. 10 Things for which it is now or never

11. When thinking about any potential use of time, ask two questions:

I. Is it unconventional?
II. Does it promise to multiply effectiveness?

Apply 80/20 Principle In Business

1. **Large Project- Sales 35,000, Profit 16,000 euro and return on sales is 45%.**
2. **Small Project Sales 135,000, Profit 12,825 euro, and return on sales is 9.5%.**
3. **Total: Sales 170,000, profit 28,825 euro and return on sales is 17%.**
4. **These figures exhibit a 56/21 rule: large projects constitute only 21 percent (35,000/170,000) of turnover but give 56 percent of profits (16,000/28,825).**
5. **These figures tell us that 26 percent of the business (old clients) made up 84 percent of the profits: an 84/26 rule. The message here was to strive above all to keep and expand long-serving clients, who were the least price sensitive and who could be served most cheaply. New clients who do not turn into long-serving clients were recognised as being loss makers, leading to a much more selective approach to pitching for business: pitches were only made where it was believed the company concerned would turn into a long-term client.**
    I. **Old Clients: Sales 43,500, Profit 24,055 and Return on Sales 55.3%**
    II. **Intermediate Clients Sales 101,000, profit 12,726, return on sales 12.6%**
    III. **New Clients: sales 25,500, profit -7,956, and return on sales 31.2%**
    IV. **Total: Sales 170,000, profit 28,825 and Return on sales 17%**

Part 33: Classical Books, Liberal Art and Great Books of Western World

Step 207-Great Books of Western World

Volume 1

- The Great Conversation

Volume 2

- Syntopicon I: Angel, Animal, Aristocracy, Art, Astronomy, Beauty, Being, Cause, Chance, Change, Citizen, Constitution, Courage, Custom and Convention, Definition, Democracy, Desire, Dialectic, Duty, Education, Element, Emotion, Eternity, Evolution, Experience, Family, Fate, Form, God, Good and Evil, Government, Habit, Happiness, History, Honor, Hypothesis, Idea, Immortality, Induction, Infinity, Judgment, Justice, Knowledge, Labor, Language, Law, Liberty, Life and Death, Logic, and Love

Volume 3

- Syntopicon II: Man, Mathematics, Matter, Mechanics, Medicine, Memory and Imagination, Metaphysics, Mind, Monarchy, Nature, Necessity and Contingency, Oligarchy, One and Many, Opinion, Opposition, Philosophy, Physics, Pleasure and Pain, Poetry, Principle, Progress, Prophecy, Prudence, Punishment, Quality, Quantity, Reasoning, Relation, Religion, Revolution, Rhetoric, Same and Other, Science, Sense, Sign and Symbol, Sin, Slavery, Soul, Space, State, Temperance, Theology, Time, Truth, Tyranny, Universal and Particular, Virtue and Vice, War and Peace, Wealth, Will, Wisdom, and World

Volume 4

- Old Testament
- New Testament
- Homer (rendered into English prose by Samuel Butler)
    - The *Iliad*
    - The *Odyssey*

Volume 5

- Aeschylus (translated into English verse by G.M. Cookson)
  - *The Suppliant Maidens*
  - *The Persians*
  - *Seven Against Thebes*
  - *Prometheus Bound*
  - *The Oresteia*
    - *Agamemnon*
    - *Choephoroe*
    - *The Eumenides*
- Sophocles (translated into English prose by Sir Richard C. Jebb)
  - *The Oedipus Cycle*
    - *Oedipus the King*
    - *Oedipus at Colonus*
    - *Antigone*
  - *Ajax*
  - *Electra*
  - *The Trachiniae*
  - *Philoctetes*
- Euripides (translated into English prose by Edward P. Coleridge)
  - *Rhesus*
  - *Medea*
  - *Hippolytus*
  - *Alcestis*
  - *Heracleidae*
  - *The Suppliants*
  - *The Trojan Women*
  - *Ion*
  - *Helen*
  - *Andromache*
  - *Electra*
  - *Bacchantes*
  - *Hecuba*
  - *Heracles Mad*
  - *The Phoenician Women*
  - *Orestes*
  - *Iphigenia in Tauris*
  - *Iphigenia in Aulis*
  - *Cyclops*

- Aristophanes (translated into English verse by Benjamin Bickley Rogers)
  - *The Acharnians*
  - *The Knights*
  - *The Clouds*
  - *The Wasps*
  - *Peace*
  - *The Birds*
  - *The Frogs*
  - *Lysistrata*
  - *Thesmophoriazusae*
  - *Ecclesiazousae*
  - *Plutus*

Volume 6

- Herodotus
  - *The History* (translated by George Rawlinson)
- Thucydides
  - *History of the Peloponnesian War* (translated by Richard Crawley and revised by R. Feetham)

Volume 7

- Plato
  - The Dialogues (translated by Benjamin Jowett)
    - *Charmides*
    - *Lysis*
    - *Laches*
    - *Protagoras*
    - *Euthydemus*
    - *Cratylus*
    - *Phaedrus*
    - *Ion*
    - *Symposium*
    - *Meno*
    - *Euthyphro*
    - *Apology*
    - *Crito*
    - *Phaedo*
    - *Gorgias*
    - *The Republic*
    - *Timaeus*
    - *Critias*
    - *Parmenides*
    - *Theaetetus*
    - *Sophist*
    - *Statesman*
    - *Philebus*
    - *Laws*
  - *The Seventh Letter* (translated by J. Harward)

Volume 8

- Aristotle
  - *Categories*
  - *On Interpretation*
  - *Prior Analytics*
  - *Posterior Analytics*
  - *Topics*
  - *Sophistical Refutations*
  - *Physics*
  - *On the Heavens*
  - *On Generation and Corruption*
  - *Meteorology*
  - *Metaphysics*
  - *On the Soul*
  - Minor biological works
    - *On Sense and the Sensible*
    - *On Memory and Reminisence*
    - *On Sleep and Sleeplessness*
    - *On Dreams*
    - *On Prophesying by Dreams*
    - *On Longevity and Shortness of Life*
    - *On Youth and Old Age, On Life and Death, On Breathing*

Volume 9

- Aristotle
  - *History of Animals*
  - *Parts of Animals*
  - *On the Motion of Animals*
  - *On the Gait of Animals*
  - *On the Generation of Animals*
  - *Nicomachean Ethics*
  - *Politics*
  - *The Athenian Constitution*
  - *Rhetoric*
  - *Poetics*

Volume 10

- Hippocrates
  - Works
    - *The Hippocratic Oath*
    - *On Ancient Medicine*
    - *On Airs, Water, and Places*
    - *The Book of Prognostics*
    - *On Regimen in Acute Diseases*
    - *Of the Epidemics*
    - *On Injuries of the Head*
    - *On the Surgery*
    - *On Fractures*
    - *On the Articulations*
    - *Instruments of Reduction*
    - *Aphorisms*
    - *The Law*
    - *The Ulcer*
    - *On Fistulae*
    - *On Hemorrhoids*
    - *On the Sacred Disease*
- Galen
  - *On the Natural Faculties*

Volume 11

- Euclid
  - The Thirteen Books of *Euclid's Elements*
- Archimedes
  - *On the Sphere and Cylinder*
  - *Measurement of a Circle*
  - *On Conoids and Spheroids*
  - *On Spirals*
  - *On the Equilibrium of Planes*
  - *The Sand Reckoner*
  - *The Quadrature of the Parabola*
  - *On Floating Bodies*
  - *Book of Lemmas*
  - *The Method Treating of Mechanical Problems*
- Apollonius of Perga
  - *On Conic Sections*
- Nicomachus of Gerasa
  - *Introduction to Arithmetic*

Volume 12

- Lucretius
  - *On the Nature of Things* (translated by H.A.J. Munro)
- Epictetus
  - *The Discourses* (translated by George Long)
- Marcus Aurelius
  - *The Meditations* (translated by George Long)

Volume 13

- Virgil (translated into English verse by James Rhoades)
  - *Eclogues*
  - *Georgics*
  - *Aeneid*

Volume 14

- Plutarch
  - *The Lives of the Noble Grecians and Romans (translated by John Dryden)*

Volume 15

- P. Cornelius Tacitus (translated by Alfred John Church and William Jackson Brodribb)
  - *The Annals*
  - *The Histories*

Volume 16

- Ptolemy
  - *Almagest*, (translated by R. Catesby Taliaferro)
- Nicolaus Copernicus
  - *On the Revolutions of Heavenly Spheres* (translated by Charles Glenn Wallis)
- Johannes Kepler (translated by Charles Glenn Wallis)
  - *Epitome of Copernican Astronomy* (Books IV–V)
  - *The Harmonies of the World* (Book V)

Volume 17

- Plotinus
  - *The Six Enneads (translated by Stephen MacKenna and B. S. Page)*

Volume 18

- Augustine of Hippo
  - *The Confessions*
  - *The City of God*
  - *On Christian Doctrine*

Volume 19

- Thomas Aquinas
  - *Summa Theologica* (First part complete, selections from second part, translated by the Fathers of the English Dominican Province and revised by Daniel J. Sullivan)

Volume 20

- Thomas Aquinas
  - *Summa Theologica* (Selections from second and third parts and supplement, translated by the Fathers of the English Dominican Province and revised by Daniel J. Sullivan)
- John Calvin
  - *Institutes of the Christian Religion* (Selections)

Volume 21

- Dante Alighieri
  - *Divine Comedy* (Translated by Charles Eliot Norton)

Volume 22

- Geoffrey Chaucer
  - *Troilus and Criseyde*
  - *The Canterbury Tales*

Volume 23

- Niccolò Machiavelli
  - *The Prince*
- Thomas Hobbes
  - *Leviathan*

- Erasmus
  - *The Praise of Folly*

Volume 24

- François Rabelais
  - *Gargantua and Pantagruel*, but only up to book 4.

Volume 25

- Michel Eyquem de Montaigne
  - Essays

Volume 26

- William Shakespeare
  - *The First Part of King Henry the Sixth*
  - *The Second Part of King Henry the Sixth*
  - *The Third Part of King Henry the Sixth*
  - *The Tragedy of Richard the Third*
  - *The Comedy of Errors*
  - *Titus Andronicus*
  - *The Taming of the Shrew*
  - *The Two Gentlemen of Verona*
  - *Love's Labour's Lost*
  - *Romeo and Juliet*
  - *The Tragedy of King Richard the Second*
  - *A Midsummer Night's Dream*
  - *The Life and Death of King John*
  - *The Merchant of Venice*
  - *The First Part of King Henry the Fourth*
  - *The Second Part of King Henry the Fourth*
  - *Much Ado About Nothing*
  - *The Life of King Henry the Fifth*
  - *Julius Caesar*
  - *As You Like It*

Volume 27

- William Shakespeare
  - *Twelfth Night; or, What You Will*
  - *The Tragedy of Hamlet, Prince of Denmark*
  - *The Merry Wives of Windsor*
  - *Troilus and Cressida*
  - *All's Well That Ends Well*
  - *Measure for Measure*
  - *Othello, the Moor of Venice*
  - *King Lear*
  - *Macbeth*
  - *Antony and Cleopatra*
  - *Coriolanus*
  - *Timon of Athens*
  - *Pericles, Prince of Tyre*
  - *Cymbeline*
  - *The Winter's Tale*
  - *The Tempest*
  - *The Famous History of the Life of King Henry the Eighth*
  - Sonnets

Volume 28

- William Gilbert
  - *On the Loadstone and Magnetic Bodies*
- Galileo Galilei
  - *Dialogues Concerning the Two New Sciences*
- William Harvey
  - *On the Motion of the Heart and Blood in Animals*
  - *On the Circulation of Blood*
  - *On the Generation of Animals*

Volume 29

- Miguel de Cervantes
  - *The History of Don Quixote de la Mancha* (translated by John Ormsby)

Volume 30

- Sir Francis Bacon
  - *The Advancement of Learning*
  - *Novum Organum*
  - *New Atlantis*

Volume 31

- René Descartes
  - *Rules for the Direction of the Mind*
  - *Discourse on the Method*
  - *Meditations on First Philosophy*
  - *Objections Against the Meditations and Replies*
  - *The Geometry*
- Benedict de Spinoza
  - *Ethics*
- Molière
  - *The School for Wives*
  - *The Critique of the School for Wives*
  - *Tartuffe*
  - *Don Juan*
  - *The Miser*
  - *The Would-Be Gentleman*
  - *The Imaginary Invalid*
- Jean Racine
  - *Bérénice*
  - *Phèdre*

Volume 32

- John Milton
  - English Minor Poems
    - *On the Morning of Christ's Nativity*
    - A Paraphrase on Psalm 114
    - Psalm 136
    - *The Passion*
    - *On Time*
    - *Upon the Circumcision*
    - *At a Solemn Musick*
    - *An Epitaph on the Marchioness of Winchester*
    - *Song on May Morning*
    - *On Shakespeare*
    - *On the University Carrier*
    - *Another on the same*
    - *L'Allegro*
    - *Il Penseroso*
    - *Arcades*
    - *Lycida*
    - *Comus*
    - *On the Death of a Fair Infant*
    - *At a Vacation Exercise*
    - *The Fifth Ode of Horace*
    - Sonnets (I, and VII—XIX)
    - *On the New Forcers of Conscience*
    - *On the Lord General Fairfax at the Siege of Colchester*
    - *To the Lord General Cromwell*
    - *To Sir Henry Vane the Younger*
    - *To Mister Cyriack the Skinner upon his Blindness*
    - Psalms (I—VIII & LXXX—LXXXVIII)
  - *Paradise Lost*
  - *Samson Agonistes*
  - *Areopagitica*

Volume 33

- Blaise Pascal
  - *The Provincial Letters*
  - *Pensées*
  - Scientific and mathematical essays

Volume 34

- Sir Isaac Newton
  - *Mathematical Principles of Natural Philosophy*
  - *Optics*
- Christiaan Huygens
  - *Treatise on Light*
- Voltaire
  - *Candide*
- Denis Diderot
  - *Rameau's Nephew*

Volume 35

- John Locke
  - *A Letter Concerning Toleration*
  - *Concerning Civil Government, Second Essay*
  - *An Essay Concerning Human Understanding*
- George Berkeley
  - *The Principles of Human Knowledge*
- David Hume
  - *An Enquiry Concerning Human Understanding*

Volume 36

- Jonathan Swift
  - *Gulliver's Travels*
- Laurence Sterne
  - *The Life and Opinions of Tristram Shandy, Gentleman*

Volume 37

- Henry Fielding
  - *The History of Tom Jones, a Foundling*

Volume 38

- Charles de Secondat, Baron de Montesquieu
  - *The Spirit of the Laws*
- Jean Jacques Rousseau
  - *A Discourse on the Origin of Inequality*
  - *A Discourse on Political Economy*
  - *The Social Contract*

Volume 39[

- Adam Smith
  - *An Inquiry into the Nature and Causes of the Wealth of Nations*

Volume 40

- Edward Gibbon
  - *The Decline and Fall of the Roman Empire* (Part 1)

Volume 41

- Edward Gibbon
  - *The Decline and Fall of the Roman Empire* (Part 2)

Volume 42

- Immanuel Kant
  - *Critique of Pure Reason*
  - *Fundamental Principles of the Metaphysic of Morals*
  - *Critique of Practical Reason*
  - Excerpts from *The Metaphysics of Morals*
    - *Preface and Introduction to the Metaphysical Elements of Ethics with a note on Conscience*
    - *General Introduction to the Metaphysic of Morals*
    - *The Science of Right*
  - *The Critique of Judgement*

Volume 43

- American State Papers
  - Declaration of Independence
  - Articles of Confederation
  - The Constitution of the United States of America
- Alexander Hamilton, James Madison, John Jay
  - *The Federalist*
- John Stuart Mill
  - *On Liberty*
  - *Considerations on Representative Government*
  - *Utilitarianism*
- Søren Kierkegaard
  - *Fear and Trembling*
- Friedrich Nietzsche
  - *Beyond Good and Evil*

Volume 44

- James Boswell
  - *The Life of Samuel Johnson, LL.D.*
- Alexis de Tocqueville
  - *Democracy in America*

Volume 45

- Antoine Laurent Lavoisier
  - *Elements of Chemistry*
- Jean Baptiste Joseph Fourier
  - *Analytical Theory of Heat*
- Michael Faraday
  - *Experimental Researches in Electricity*
- Honoré de Balzac
  - *Cousin Bette*

Volume 46

- Georg Wilhelm Friedrich Hegel
  - *The Philosophy of Right*
  - *The Philosophy of History*
- Jane Austen
  - *Emma*
- George Eliot
  - *Middlemarch*

Volume 47

- Johann Wolfgang von Goethe
  - *Faust*
- Charles Dickens
  - *Little Dorrit*

Volume 48

- Herman Melville
  - *Moby Dick; or, The Whale*
- Mark Twain
  - *Huckleberry Finn*

Volume 49[

- Charles Darwin
  - *The Origin of Species by Means of Natural Selection*
  - *The Descent of Man, and Selection in Relation to Sex*

Volume 50

- Karl Marx
  - *Capital*
- Karl Marx and Friedrich Engels
  - *Manifesto of the Communist Party*

Volume 51

- Count Leo Tolstoy
  - *War and Peace*

Volume 52

- Fyodor Mikhailovich Dostoevsky
  - *The Brothers Karamazov*
- Henrik Ibsen
  - *A Doll's House*
  - *The Wild Duck*
  - *Hedda Gabler*
  - *The Master Builder*

The contents of the six volumes of added 20th-century material:

Volume 53

- William James
  - *The Principles of Psychology*

Volume 54

- Sigmund Freud
  - *The Origin and Development of Psycho-Analysis*
  - *Selected Papers on Hysteria*
  - *The Sexual Enlightenment of Children*
  - *The Future Prospects of Psycho-Analytic Therapy*
  - *Observations on "Wild" Psycho-Analysis*
  - *The Interpretation of Dreams*
  - *On Narcissism*
  - *Instincts and Their Vicissitudes*
  - *Repression*
  - *The Unconscious*
  - *A General Introduction to Psycho-Analysis*
  - *Beyond the Pleasure Principle*
  - *Group Psychology and the Analysis of the Ego*
  - *The Ego and the Id*
  - *Inhibitions, Symptoms, and Anxiety*
  - *Thoughts for the Times on War and Death*
  - *Civilization and Its Discontents*
  - *New Introductory Lectures on Psycho-Analysis*

Volume 55

- William James
  - *Pragmatism*
- Henri Bergson
  - "An Introduction to Metaphysics"
- John Dewey
  - *Experience and Education*
- Alfred North Whitehead
  - *Science and the Modern World*
- Bertrand Russell
  - *The Problems of Philosophy*
- Martin Heidegger
  - *What Is Metaphysics?*
- Ludwig Wittgenstein
  - *Philosophical Investigations*
- Karl Barth
  - *The Word of God and the Word of Man*

Volume 56

- Henri Poincaré
  - *Science and Hypothesis*
- Max Planck
  - *Scientific Autobiography and Other Papers*
- Alfred North Whitehead
  - *An Introduction to Mathematics*
- Albert Einstein
  - *Relativity: The Special and the General Theory*
- Arthur Eddington
  - *The Expanding Universe*
- Niels Bohr
  - *Atomic Theory and the Description of Nature* (selections)
  - *Discussion with Einstein on Epistemology*
- G. H. Hardy
  - *A Mathematician's Apology*
- Werner Heisenberg
  - *Physics and Philosophy*
- Erwin Schrödinger
  - *What Is Life?*
- Theodosius Dobzhansky
  - *Genetics and the Origin of Species*
- C. H. Waddington
  - *The Nature of Life*

Volume 57

- Thorstein Veblen
  - *The Theory of the Leisure Class*
- R. H. Tawney
  - *The Acquisitive Society*
- John Maynard Keynes
  - *The General Theory of Employment, Interest and Money*

Volume 58

- Sir James George Frazer
  - *The Golden Bough* (selections)
- Max Weber
  - *Essays in Sociology* (selections)
- Johan Huizinga
  - *The Autumn of the Middle Ages*
- Claude Lévi-Strauss
  - *Structural Anthropology* (selections)

Volume 59

- Henry James
  - *The Beast in the Jungle*
- George Bernard Shaw
  - *Saint Joan*
- Joseph Conrad
  - *Heart of Darkness*
- Anton Chekhov
  - *Uncle Vanya*
- Luigi Pirandello
  - *Six Characters in Search of an Author*
- Marcel Proust
  - *Remembrance of Things Past*: "Swann in Love"
- Willa Cather
  - *A Lost Lady*
- Thomas Mann
  - *Death in Venice*
- James Joyce
  - *A Portrait of the Artist as a Young Man*

Volume 60

- Virginia Woolf
  - *To the Lighthouse*
- Franz Kafka
  - *The Metamorphosis*
- D. H. Lawrence
  - *The Prussian Officer*
- T. S. Eliot
  - *The Waste Land*
- Eugene O'Neill
  - *Mourning Becomes Electra*
- F. Scott Fitzgerald
  - *The Great Gatsby*
- William Faulkner
  - *A Rose for Emily*
- Bertolt Brecht
  - *Mother Courage and Her Children*
- Ernest Hemingway
  - *The Short Happy Life of Francis Macomber*
- George Orwell
  - *Animal Farm*
- Samuel Beckett
  - *Waiting for Godot*

Step 208 - Classical Books

Classic Biographies:

Read the personal biographies and autobiographies of the most influential thinkers and inventors in history.

1. Autobiography of a Yogi (Paramahansa Yogananda)

2. The World As I See It (Albert Einstein)

3. My Inventions: The Autobiography Of Nikola Tesla (Nikola Tesla)

4. The Autobiography of Charles Darwin (Charles Darwin)

6. The Autobiography of Benjamin Franklin (Benjamin Franklin)

7. Autobiography: Truth and Fiction Relating to My Life (Johann Wolfgang von Goethe)

8. The Seven Pillars of Wisdom (T.E. Lawrence)

9. The Everyday Life of Abraham Lincoln (Francis F. Browne)

10. Theodore Roosevelt: An Autobiography (Theodore Roosevelt)

11. The Autobiography of Malcolm X (As Told To Alex Haley)

12. Mark Twain: A Biography (Albert Bigelow Paine)

13. The Autobiography of Andrew Carnegie (Andrew Carnegie)

14. The Story of My Life (Helen Keller)

Philosophy:

Deepen your knowledge of philosophy with the classics of Western Philosophy.

1. The Republic (Plato)

2. Thus Spake Zarathustra (Friedrich Nietzsche)

3. Beyond Good and Evil (Friedrich Nietzsche)

4. The Critique of Pure Reason (Immanuel Kant)

5. The Problems of Philosophy (Bertrand Russell)

6. History of Western Philosophy (Bertrand Russell)

7. A Pluralistic Universe (William James)

8. The Nicomachean Ethics (Aristotle)

9. Meditations (Marcus Aurelius)

10. A Treatise of Human Nature (David Hume)

11. Mere Christianity (C.S. Lewis)

12. The Wisdom of Life (Arthur Schopenhauer)

13. Utopia (Thomas More)

14. Island (Aldous Huxley)

Politics:

Influential political treatises that ignited modern political debates that still rage.

1. The Wealth of Nations (Adam Smith)

2. The Age of Reason (Thomas Paine)

3. Common Sense (Thomas Paine)

4. The Prince (Niccolò Machiavelli)

5. Second Treatise of Government (John Locke)

6. The Communist Manifesto (Friedrich Engels and Karl Marx)

7. On Liberty (John Stuart Mill)

8. Proposed Roads to Freedom (Bertrand Russell)

9. Anarchism and Other Essays (Emma Goldman)

10. Democracy in America (Alexis de Tocqueville)

11. Brave New World (Aldous Huxley)

12. 1984 (George Orwell)

Education:

Thought-provoking books on the nature of education and how to deepen your understanding of life.

1. Education and the Significance of Life (Jiddhu Krishnamurti)

2. Dr. Montessori's Own Handbook (Maria Montessori)

3. The Montessori Method (Maria Montessori)

4. Democracy and Education (John Dewey)

5. Deschooling Society (Ivan Illich)

6. Weapons of Mass Instruction (John Taylor Gatto)

Psychology:

Explore the inner workings of the human mind through the lens of modern psychology.

1. Dream Psychology (Sigmund Freud)

2. The Psychology of Revolution (Gustav Le Bon)

3. Your Mind and How to Use It: A Manual of Practical Psychology (Walter Atkinson)

4. The Mass Psychology of Fascism (Wilhelm Reich)

5. Dreams (Henry Bergson)

6. As a Man Thinketh (James Allen)

7. The Varieties of Religious Experience: A Study in Human Nature (William James)

Science:

1. The Mathematical Principles of Natural Philosophy (Sir Isaac Newton)
2. On the Origin of Species (Charles Darwin)
3. Physics (Aristotle)
4. The Pioneers of Science (Sir Oliver Lodge)
5. Relativity: The Special & the General Theory (Albert Einstein)
6. The Journals of Lewis and Clark (William Clark and Meriwether Lewis)

Western Religion:

The three Abrahamic religions and their different cultural translations of God, scripture and truth.

1. The Torah
2. The Bible
3. The Koran

Eastern Religion:

The Eastern religious traditions and their radically different ideas of liberation and the nature of being.

1. The Yoga Sutras of Patanjali

2. The Rig Veda

3. The Upanishads

4. The Mahabharata

5. The Ramayan

6. The Bhagavad Gita

7. The Kama Sutra of Vatsyayana

8. The Dhammapada: The Sayings of The Buddha

9. The Tao Te Ching

English/Scottish/Irish/Welsh Classics:

Literary classics from the nations that comprise the United Kingdom.

1. The Life and Adventures of Robinson Crusoe (Daniel Defoe)
2. The Adventures of Sherlock Holmes (Arthur Conan Doyle)
3. The Lost World (Arthur Conan Doyle)
4. Ulysses (James Joyce)
5. A Portrait of the Artist as a Young Man (James Joyce)
6. Finnegan's Wake (James Joyce)
7. Treasure Island (Robert Louis Stevenson)
8. A Tale of Two Cities (Charles Dickens)
9. Great Expectations (Charles Dickens)
10. Pride and Prejudice (Jane Austen)
11. The Picture of Dorian Gray (Oscar Wilde)
12. The Importance of Being Earnest (Oscar Wilde)
13. Gulliver's Travels (Jonathan Swift)
14. A Modest Proposal (Jonathan Swift)
15. The Jungle Book (Rudyard Kipling)
16. Dracula (Bram Stoker)
17. The Time Machine (H. G. Wells)
18. The Complete Works (William Shakespeare)
19. Paradise Lost (John Milton)

20. The Canterbury Tales (Geoffrey Chaucer)

21. Heart of Darkness (Joseph Conrad)

22. The Lord Of The Rings (J. R. R. Tolkien)

23. Alice's Adventures in Wonderland (Lewis Carroll)

24. Through the Looking-Glass (Lewis Carroll)

25. The Pilgrim's Progress (John Bunyan)

26. The Chronicles of Narnia (C.S. Lewis)

Western European Classics:

Literary classics from the Western European nations of Germany, France, Spain, and Italy.

1. Siddhartha (Hermann Hesse)

2. The Count of Monte Cristo (Alexandre Dumas)

3. Grimms' Fairy Tales (Jacob Grimm and Wilhelm Grimm)

4. Les Misérables (Victor Hugo)

5. The Divine Comedy (Dante)

6. Candide (Voltaire)

7. Don Quixote (Miguel de Cervantes Saavedra)

8 Around the World in Eighty Days (Jules Verne)

9. Faust (Johann Wolfgang von Goethe)

10. The Notebooks of Leonardo Da Vinci (Leonardo da Vinci)

11. Madame Bovary (Gustave Flaubert)

12. The Stranger (Albert Camus)

American Classics:

American literature classics that have shaped uniquely American ideals of freedom and liberty.

1. Walden, and On The Duty Of Civil Disobedience (Henry David Thoreau)

2. Moby Dick (Herman Melville)

3. Adventures of Huckleberry Finn (Mark Twain)

4. Leaves of Grass (Walt Whitman)

5. The Wonderful Wizard of Oz (L. Frank Baum)

6. The Call of the Wild (Jack London)

7. Twelve Years a Slave (Solomon Northup)

8. This Side of Paradise (F. Scott Fitzgerald)

9. Poems (T. S. Eliot)

10. Essays (Ralph Waldo Emerson)

11. On The Road (Jack Kerouac)

Russian Classics:

Renowned Russian literary classics.

1. War and Peace (Leo Tolstoy)

2. Anna Karenina (Leo Tolstoy)

3. The Gulag Archipelago (Aleksandr Solzhenitsyn)

4. The Brothers Karamazov (Fyodor Dostoyevsky)

5. Notes from the Underground (Fyodor Dostoyevsky)

Ancient Greek and Roman Literature:

Classic epics from ancient Greece and Rome.

1. The Iliad (Homer)

2. The Odyssey (Homer)

3. Aesop's Fables (Aesop)

4. Myths and Legends of Ancient Greece and Rome (E. M. Berens)

5. The History Of The Decline And Fall Of The Roman Empire (Edward Gibbon)

Indian Classics:

Some of the classic books of India.

1. Sadhana: The Realisation of Life (Rabindranath Tagore)

2. Gitanjali (Rabindranath Tagore)

Chinese Classics:

Some of the classic books of China.

1. The Analects (Confucius)
2. The Sayings of Confucius (Confucius)
3. Chuang Tzu: Mystic, Moralist, and Social Reformer (Zhuangzi)
4. The Art of War (Sun Tzu)

Step 209-How To Get Liberal Arts Education without Degree:)

While the Classical Liberal Arts typically fall at the bottom of the education hierarchy today, I think it's one of the most valuable education curriculums you can follow to prepare yourself for an uncertain future.

Why? Because nobody can predict which technical or job skills will stay in-demand in a future that will be dominated by robots and artificial intelligence. But studying emerging trends, we do know that we will need to train the uniquely human qualities that can't be replicated by machines.

These uniquely human qualities are what make us effective leaders and good communicators: creativity, empathy, social intelligence, curiosity, storytelling and adaptability.

The Liberal Arts has a bad reputation because it has the lowest barriers to entry of University degrees and it often attracts students that can't get into the more competitive disciplines in Science, Technology, Engineering and Mathematics (STEM). In these technical disciplines, you will fall behind very quickly if you don't diligently focus for long periods of time and complete the daily work assignments.

However, if you really dedicate yourself to studying the Classical Liberal Arts it can be one of the most challenging and helpful University degrees. There are few forms of higher education more effective at building individuals with strong character who are well-rounded and flexible in the face of disruptive change.

And now thanks to the Internet, you don't necessary have to go up to a 100K in debt to get a Liberal Arts education. For a fraction of the cost of a University degree, you create your own own Liberal Arts education while traveling the world and directly experiencing the fascinating cultures, history and museums across the cultural mosaic of human civilization.

What Is The Meaning of Liberalism?

A Classical Liberal Arts education studying the Trivium and Quadrivium while reading the classical and modern work of literature and philosophy that form the generally agreed upon Liberal Arts canon in Western education.

Another important component is regularly debating the most important issues of our day and the human condition with other intelligent and informed people who can challenge you to see your own cogntive biases and reality tunnels.

While the classical meaning of liberalism is often bastardized by pundits in the media, a liberal is a someone who works to freed himself or herself from the bigotry, authoritarian attitudes and established dogmas.

Liberalism often gets a bad name because of the elitism attached to attaining a Liberal Arts education at a prestigious University. Many highly educated people perpetuate this elitism through their often thinly-veiled contempt for people of lower educational attainment and lesser financial means.

This is misguided. **A real liberal is someone who seeks the freedom and equality of all people** — everywhere in the world — and does not allow him or herself to be caged by any institutional, ideological or class biases.

The 4-Year Liberal Arts Reading List

This 4-Year Year Liberal Arts reading list is a guide to many of history's most important books at least from a Western perspective (please feel free to share a similar canon from other cultures that has been translated into English in the comments).

If you read the books on this 4-year Liberal Arts reading list you can learn directly from the thinking patterns of history's greatest thinkers and I can guarantee it will transform your world and make you a better person.

This reading list has been reviewed yearly since 1937 by the Liberal Arts faculty at St. John's College to create a generally agreed upon Liberal Arts curriculum that anyone can study in their own time.

The first two years span over 2,000 years of intellectual history and the last two years are from the last 300 years that have seen the development of the ideas that underpin the science and freedom we enjoy in the modern world.

The Liberal Arts reading list is organized in chronological order but you don't necessary need to read these books in any particular order.

If you're really determined, you can complete the entire Liberal Arts canon in about 4 years by reading a book every 1-2 weeks (some larger books will take longer to read though)

However, for most people this education may stretch on for decades as you read the books on the list that most interest you (and I've also created a 21st Century Reading List of other books I recommend reading as well).

1st Year: Greek Civilization and the Classical Liberal Arts

The foundation of Western Civilization was laid by the Greeks. Pythagorus, Socrates, Plato and Aristotle created a liberal renaissance in the ancient European world.

The Socratic Method and The Trivium still form of the foundation of one the best systems ever created for critical thinking and rational debate.

1. HOMER: *Iliad, Odyssey*
2. AESCHYLUS: *Agamemnon, Libation Bearers, Eumenides, Prometheus Bound*
3. SOPHOCLES: *Oedipus Rex, Oedipus at Colonus, Antigone, Philoctetes, Ajax*
4. THUCYDIDES: *Peloponnesian War*
5. EURIPIDES: *Hippolytus, Bacchae*
6. HERODOTUS: *Histories*
7. ARISTOPHANES: *Clouds*
8. PLATO (SOCRATES): *Meno, Gorgias, Republic, Apology, Crito, Phaedo, Symposium, Parmenides, Theaetetus, Sophist, Timaeus, Phaedrus*
9. ARISTOTLE: *Poetics, Physics, Metaphysics, Nicomachean Ethics, On Generation and Corruption, Politics, Parts of Animals, Generation of Animals*
10. EUCLID: *Elements*
11. LUCRETIUS: *On the Nature of Things*
12. PLUTARCH: *Lycurgus, Solon*
13. NICOMACHUS: *Arithmetic*
14. LAVOISIER: *Elements of Chemistry*
15. HARVEY: *Motion of the Heart and Blood*
16. Essays by: Archimedes, Fahrenheit, Avogadro, Dalton, Cannizzaro, Virchow, Mariotte, Driesch, Gay-Lussac, Spemann, Stears, J.J. Thompson, Mendeleyev, Berthollet, J.L. Proust.

2nd Year: Roman, Medieval and Renaissance Periods

The Roman Empire lasted nearly 700 years before collapsing under the weight of its immorality and greed.

The period known as the Dark Ages followed, which was characterized by illiteracy and the authoritarian rule of the Catholic Church until the Italian Renaissance and birth of modern world.

1. THE HEBREW BIBLE
2. THE BIBLE: New Testament
3. ARISTOTLE: *De Anima*, *On Interpretation*, *Prior Analytics*, *Categories*
4. APOLLONIUS: *Conic*s
5. VIRGIL: *Aeneid*
6. PLUTARCH: “Caesar,” “Cato the Younger,” “Antony,” “Brutus”
7. EPICTETUS: *Discourses*, Manual
8. TACITUS: *Annals*
9. PTOLEMY: *Almagest*
10. PLOTINUS: *The Enneads*
11. AUGUSTINE: *Confessions*
12. MAIMONIDES: *Guide for the Perplexed*
13. ST. ANSELM: *Proslogium*
14. AQUINAS: *Summa Theologica*
15. DANTE: *Divine Comedy*
16. CHAUCER: *Canterbury Tales*
17. MACHIAVELLI: *The Prince, Discourses*
18. KEPLER: *Epitome IV*
19. RABELAIS: *Gargantua* and *Pantagruel*
20. PALESTRINA: *Missa Papae Marcelli*
21. MONTAIGNE: *Essays*
22. VIETE: *Introduction to the Analytical Art*
23. BACON: *Novum Organum*
24. SHAKESPEARE: *Richard II, Henry IV, The Tempest, As You Like It, Hamlet, Othello, Macbeth, King Lear, and Sonnets*
25. POEMS BY: Marvell, Donne, and other 16th- and 17th-century poets
26. DESCARTES: *Geometry, Discourse on Method*
27. PASCAL: *Generation of Conic Sections*
28. BACH: *St. Matthew Passion*, *Inventions*
29. HAYDN: *Quartets*
30. MOZART: Operas
31. BEETHOVEN: *Third Symphony*
32. SCHUBERT: Songs
33. MONTEVERDI: *L’Orfeo*
34. STRAVINSKY: *Symphony of Psalms.*

3rd Year: The Enlightenment in the 17th and 18th Centuries

The separation of the church and state led to the Enlightenment and a new golden age of scholarship and innovation for the modern nations who freed themselves from religious theocracy.

It also lead to the despiritualization of the Universe and the dehumanization of people who resisted the evangelical zeal of Western science and religion.

1. CERVANTES: *Don Quixote*
2. GALILEO: *Two New Sciences*
3. HOBBES*: Leviathan*
4. DESCARTES: *Meditations, Rules for the Direction of the Mind*
5. MILTON: *Paradise Lost*
6. LA ROCHEFOUCAULD: *Maximes*
7. LA FONTAINE: *Fables*
8. PASCAL: *Pensees*
9. HUYGENS: *Treatise on Light, On the Movement of Bodies by Impact*
10. ELIOT: *Middlemarch*
11. SPINOZA: *Theological-Political Treatise*
12. LOCKE: *Second Treatise of Government*
13. RACINE: *Phaedre*
14. NEWTON: *Principia Mathematica*
15. KEPLER: *Epitome IV*
16. LEIBNIZ: *Monadology, Discourse on Metaphysics, Essay On Dynamics, Philosophical Essays, Principles of Nature and Grace*
17. SWIFT: *Gulliver's Travels*
18. HUME: *Treatise of Human Nature*
19. ROUSSEAU: *Social Contract, The Origin of Inequality*
20. MOLIERE: *Le Misanthrope*
21. ADAM SMITH: *Wealth of Nations*
22. KANT: *Critique of Pure Reason, Foundations of the Metaphysics of Morals*
23. MOZART: *Don Giovanni*
24. JANE AUSTEN: *Pride and Prejudice*
25. DEDEKIND: "Essay on the Theory of Numbers"
26. "Articles of Confederation," "Declaration of Independence," "Constitution of the United States of America"
27. HAMILTON, JAY AND MADISON: *The Federalist*
28. TWAIN: *The Adventures of Huckleberry Finn*
29. WORDSWORTH: *The Two Part Prelude of 1799*
30. Essays by: Young, Taylor, Euler, D. Bernoulli, Orsted, Ampere, Faraday, Maxwell.

4th Year: The Modern World In The 19th and 20th Centuries

The liberal ideals, laws and sciences provided the foundation for the modern world and many of the ideas and philosophies today come from much deeper roots.

These books can help you develop a better understanding the freedoms and flaws of the modern world.

1. Supreme Court opinions
2. GOETHE: *Faust*
3. DARWIN: *Origin of Species*
4. HEGEL: *Phenomenology of Mind*, “Logic” (from the Encyclopedia)
5. LOBACHEVSKY: *Theory of Parallels*
6. TOCQUEVILLE: *Democracy in America*
7. LINCOLN: Selected Speeches
8. FREDERICK DOUGLASS: Selected Speeches
9. KIERKEGAARD: *Philosophical Fragments, Fear and Trembling*
10. WAGNER: *Tristan and Isolde*
11. MARX: *Capital, Political and Economic Manuscripts of 1844, The German Ideology*
12. DOSTOEVSKI: *Brothers Karamazov*
13. TOLSTOY: *War and Peace*
14. MELVILLE: *Benito Cereno*
15. O’CONNOR: Selected Stories
16. WILLIAM JAMES; *Psychology, Briefer Course*
17. NIETZSCHE: *Beyond Good and Evil*
18. FREUD: Introductory Lectures on Psychoanalysis
19. BOOKER T. WASHINGTON: Selected Writings
20. DUBOIS: *The Souls of Black Folk*
21. HUSSERL: *Crisis of the European Sciences*
22. HEIDEGGER: *Basic Writings*
23. EINSTEIN: Selected papers
24. CONRAD: *Heart of Darkness*
25. FAULKNER: *Go Down Moses*
26. FLAUBERT: *Un Coeur Simple*
27. WOOLF: *Mrs. Dalloway*
28. Poems by: Yeats, T.S. Eliot, Wallace Stevens, Valery, Rimbaud
29. Essays by: Faraday, J.J. Thomson, Millikan, Minkowski, Rutherford, Davisson, Schrodinger, Bohr, Maxwell, de Broglie, Heisenberg, Mendel, Boveri, Sutton, Morgan, Beadle & Tatum, Sussman, Watson & Crick, Jacob & Monod, Hardy

Part 34: Motivation Quotes

Step 220-Motivation Quotes

Hard Work

- **"I have nothing in common with lazy people who blame others for their lack of success. Great things come from hard work and perseverance. No excuses." Kobe Bryant**

- **"Do. The Work. Every day, you have to do something you don't want to do. Every day. Challenge yourself to be uncomfortable, push past the apathy and laziness and fear." Tim Grover**

- **"There are no shortcuts. I don't want to hear about workouts you can do in five minutes a day, or twenty minutes a week; that's total bullshit."**

- **"I love the guys who want results so much they'll fight me to do more than they're supposed to."**

- **You keep pushing yourself harder when everyone else has had enough."**

- **"You get into the Zone, you shut out everything else, and control the uncontrollable."**

- **"You don't compete with anyone, you find your opponent's weakness and you attack."**

- **Hard work is everyday process trying to figure out strengths and weaknesses. Then study more to see the places to improve. by Kobe Bryant**

Improvement

- ***If You Keep Out improving the guys Consistently, eventually, then none of the guys can compete with you*** ***Patrick Bet Davis.**

- **“You have power over your mind – not outside events. Realise this, and you will find strength.” Marcus Aurelius**

- **“If it is not right do not do it; if it is not true do not say it.” Marcus Aurelius**

- **Everything You do try to learn , how to become better in the craft. When, you have this point of view, then literally the world becomes your library to help you to become better at your craft. Because you know what you want, the world giving you exactly the information you needed. Kobe Bryant**

- **You have to look at the reality of situation. You need to get over yourself, it is not about you. Like Ok, you feel embarrassed, you are not that important, you worrdy how people may perceive you and like you are walking around and it’s embarrassing because you failed something in front of the crowd. Get over yourself. After that, the. You need ask questions, why did I failed in those situation, got an answer and work on those things hard.**
- **"The most important conversations you’ll ever have are the ones you’ll have with yourself.”**
- **The ticket to victory often comes down to bringing your very best when you feel your worst.”**
- **Are you an experienced scuba diver? Great, shed your gear, take a deep breath and become a one-hundred-foot free diver. Are you a badass triathlete? Cool, learn how to rock climb. Are you enjoying a wildly successful career? Wonderful, learn a new language or skill. Get a second degree. Always be willing to embrace ignorance and become the dumb fuck in the classroom again, because that is the only way to expand your body of knowledge and body of work. It’s the only way to expand your mind.”**
- **Always be ready to adjust, recalibrate, and stay after it to become better, somehow.”**

- **If you want to master the mind and remove your governor, you'll have to become addicted to hard work. Because passion and obsession, even talent, are only useful tools if you have the work ethic to back them up."**
- **Most of us sweep our failures and evil secrets under the rug, but when we run into problems, that rug gets lifted up, and our darkness re-emerges, floods our soul, and influences the decisions which determine our character."**
- **"A lot of us surround ourselves with people who speak to our desire for comfort. People who would rather treat the pain of our wounds and prevent further injury than help us callous over them and try again. We need to surround ourselves with people who will tell us what we need to hear, not what we want to hear, but at the same time not make us feel we're up against the impossible."**
- **"In every failure there is something to be gained, even if it's only practice for the next test you'll have to take. Because that next test is coming. That's a guarantee."**
- **There is no more time to waste. Hours and days evaporate like creeks in the desert. That's why it's okay to be cruel to yourself as long as you realize you're doing it to become better."**
- **Motivation is Crap. Motivation Come and Goes. People right Now maybe listening to this shit, they get motivated go run if its cold somewhere where they are at, a lot of the people shut that door go back inside, that's motivation. It comes and goes as how you feel if you and your wife are good, if you and your kids are good, if you are good at work. I like people whose life is imploded Ain't got shit in life and says, still get after today man. And that's what it's about so that's when you move from motivated to driven to obsessed. And I want people realise that once you get to this portion over here. The driven obsessed part, you are unstoppable. This has to be something that's comes from deep down inside.**
- **Goggins' approach to motivation is to be aggressively bad-ass towards yourself. Find the things you hate and force yourself to do them again and again until you are numb to the suffering. And then do more. Always do more than the next guy.**
- **"I never felt that I was good enough, strong enough, smart enough. He let me know that there was always room for improvement. A lot of sons would have been crippled by his demands, but instead the discipline rubbed off on me. I turned it into drive." – Arnold Schwarzenegger**

Failure and Success

- ***I've missed more than 9,000 shots in my career. I've lost almost 300 games. Twenty-six times I've been trusted to take the game-winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed*. By Michael Jordan.**

- **I can Accept Failure, everyone fails at something. But I cannot Accept not trying. By Michael Jordan**
- **"Just like in bodybuilding, failure is also a necessary experience for growth in our own lives, for if we're never tested to our limits, how will we know how strong we really are? How will we ever grow?" – Arnold Schwarzenegger**
- **"The last three or four reps is what makes the muscle grow. This area of pain divides the champion from someone else who is not a champion. That's what most people lack, having the guts to go on and just say they'll go through the pain no matter what happens." – Arnold Schwarzenegger**
- **"Failure is not an option. Everyone has to succeed." – Arnold Schwarzenegger**
- **"Life's six rules for success. 1. Trust yourself. 2. Break some rules. 3. Don't be afraid to fail. 4. Ignore the naysayers. 5. Work like hell. 6. Give something back." – Arnold Schwarzenegger**
- **One of the most fascinating lessons I've absorbed about life is that the struggle is good.**

Relentless

- **"It's a lot more than mind over matter. It takes relentless self-discipline to schedule suffering into your day, every day."**

Hardship and Obstacles

- **"Obstacles don’t have to stop you. If you run into a wall, don’t turn around and give up. Figure out how to climb it, go through it, or work around it.” By Michael Jordan**
- **"Don't stop when you're tired. Stop when you're done." "Everyone fails sometimes and life isn't supposed to be fair, much less bend to your every whim." "You must recognize what you are about to do, highlight what you do not like about it, and spend time visualizing each and every obstacle you can. By David Goggins**

Weakness and Strengths

- **My attitude is that if you push me towards something that you think is a weakness, then I will turn that perceived weakness into a strength.” By Michael Jordan**
- **“Whenever you are about to find fault with someone, ask yourself the following question: What fault of mine most nearly resembles the one I am about to criticize?” Marcus Aurelius.**
- **“Strength does not come from winning. Your struggles develop your strengths. When you go through hardships and decide not to surrender, that is strength.” – Arnold Schwarzenegger**
- **“If you don’t find the time, if you don’t do the work, you don’t get the results.” – Arnold Schwarzenegger**
- **“Denial is the ultimate comfort zone.” ~ David Goggins**
- **“Life is one big tug of war between mediocrity and trying to find your best self.” ~ David Goggins**
- **“The path to success will leave you callused, bruised, and very tired. It will also leave you empowered.” ~ David Goggins**
- **“Everybody comes to a point in their life when they want to quit. But it’s what you do at that moment that determines who you are.” ~ David Goggins**
- **“We don’t rise to the level of our expectations, we fall to the level of our training.” ~ David Goggins**
- **“Before you start a goal – let’s take care of our insecurities because they are going to surface when you put yourself in the crucible and you’re suffering.” ~ David Goggins**

- **“It’s a lot more than mind over matter. It takes relentless self discipline to schedule suffering into your day, every day.” ~ David Goggins**
- **Analyze your schedule, kill your empty habits, burn out the bullshit, and see what’s left.” ~ David Goggins**
- **“In every failure a lot of good things will have happened, and we must acknowledge them.” ~ David Goggins**
- **“A warrior is not a person that carries a gun. The biggest war you ever go through is right between your own ears. It’s in your mind. We’re all going through a war in our mind, and we have to callus our mind to fight that war and to win that war.” ~ David Goggins**
- **“Refused to compromise who I was to conform to their unwritten rules.” ~ David Goggins**
- **“Your entitled mind is dead weight. Cut it loose. Don’t focus on what you think you deserve. Take aim on what you are willing to earn!” ~ David Goggins**
- **“Tell yourself the truth! That you’ve wasted enough time, and that you have other dreams that will take courage to realize…” ~ David Goggins**
- **“Pain unlocks a secret doorway in the mind, one that leads to both peak performance, and beautiful silence.” ~ David Goggins**
- **“Suffering is the true test of life.” ~ David Goggins**
- **“When you’re in hell, you forget how great you really are because you’re suffering and you forget the great things you’ve done.” ~ David Goggins**
- **“If you want to get better, do the things that no-one else wants to do. Do the things that no-one is even thinking about doing.” ~ David Goggins**
- **“There is no more time to waste. Hours and days evaporate like creeks in the desert. That’s why it’s okay to be cruel to yourself as long as you realize you’re doing it to become better.” ~ David Goggins**
- **“Everyone fails sometimes and life isn’t supposed to be fair, much less bend to your every whim.” ~ David Goggins**
- **“You must recognize what you are about to do, highlight what you do not like about it, and spend time visualizing each and every obstacle you can.” ~ David Goggins**
- **Everybody wants a quick fix. You may get results, but they won’t be permanent. The permanent results come from you having to suffer.” ~ David Goggins**

Gratitude

- **“When you arise in the morning think of what a privilege it is to be alive, to think, to enjoy, to love…” Marcus Aurelius**

Part 35: Mental Toughness

Step 211-All of David Goggins' Mental Shifts to Reach Full Potential

1. Book By David Goggins

I. **Cant Hurt Me_ Master Your Mind and Defy the Odds By David Goggins.**

2. Accountability Mirror

The Accountability Mirror is a mirror on which you write what your current situation is, how to get out of it, and what your goals are.

The beauty of the AM is that it doesn't lie.

It shows you *exactly* who you are, stripping the truth from every embellishing story you tell yourself.

David used the AM at the very beginning to assess his situation and plan his next step.

3. Taking Souls

Taking souls is a practice aimed at silencing whoever is doubting you.

The idea behind it is simple: when your "bully" thinks you are about to give up, double down and show them you're much tougher than they think you are!

David found out about this trick when he was training to become a SEAL.

No matter how much his supervisor was trying to break him, it seemed it only made him tougher.

When his leaders understood they wouldn't manage to weaken David, they left him be.

4. The Calloused Mind

The calloused mind is a practice that helps you double down when the temptation to quit is the strongest.

Instead of thinking about how much you want to stop, remember every painful moment in your life, every humiliation, every time you've suffered, and realize that these weren't punishments to bring you down, but obstacles to fortify your mind and body!

Switch the way you look at your past. Don't look at it as a tragedy. Look at it as a training ground!

Every obstacle made you strong and prepared you for this very moment. It prepared you to endure the pain and go further than you ever have, to push your limits!

When you think about these things, something will happen in your brain. You will tap into your sympathetic nervous system, the pain will decrease and you will gain motivation.

Always be optimistic. A negative outlook will not trigger the calloused mind.

5. On Accepting Yourself

The majority of people lead mediocre lives due to psychological issues they have not resolved. Their trauma is preventing them from being their best selves.

The only way to solve a trauma is to revisit it, write it down, accept what happened, let go, and move on.

When you go back to your past and identify all of the moments when you were weak, you free yourself from them and accept what happened.

Accepting and making peace with your past helps you accept yourself in the present.

6. The Cookie Jar

The cookie jar is intimately linked to the calloused mind.

The cookie jar is a mental pool containing every happy moment and every unhappy moment of your life.

It helps you answer the question "why am I doing this" when you are in the midst of a difficult challenge.

It helps you understand that on one hand, the painful moments made you who you are so you can ultimately triumph; on the other hand, the cookie jar is a promise for many more happy moments like the ones you've already had.

It's the ultimate justification for the pain you're enduring.

7. No Shortcut

Mastery does not tolerate shortcuts.

Shortcuts exist to get better results with the same amount of pain/effort.

It can neither scale nor work in the long term.

The only way to go beyond your limitations is to do more, and better.

8. The Governor

The governor is an imaginary psychological limitation that prevents us from exploiting 100% of our capacity.

It's the reason why we don't achieve more.

The governor is that little voice in our head that tells us we suck and that we won't make it.

You need to do two things to take off your governor and access your full potential:

I. **Don't listen to your voice.**
II. **When you feel like you cannot keep moving anymore, push just 5%-10% more. Doing so, you will unlock more potential.**

9. The 40% Rule

Goggins believes that most people live up to 40% of their potential.
The remaining 60% is locked due to the governor. People never push above their capacities because they're weak.
The reason why they're weak is that they live in an environment that is too comfortable.
It makes them lazy. It makes them hate pain. And it prevents them from pushing further.
If you want to go over your 40%, you need to:

I. **Stretch your pain tolerance**
II. **Let go of your identity**
III. **Let go of your self-limiting beliefs**

10. What If?

***What if* is Goggins' last trick.**
To everyone that ever doubted you — including yourself — the most powerful thing to answer is w*hat if.*
What if it was possible? What if they were wrong? What if you were right?
***What if* opens the door of possibility. It gets you to try and see what happens.**
It keeps you moving forward.
It prevents you from quitting.

Step 212- Kobe Bryant On Mental Toughness and Work Ethic

1. **Books Kobe Bryant Toughness and Work Ethic**
    I. **Relentless_ From Good to Great to Unstoppable By Tim Grover.**
    II. **Winning_ The Unforgiving Race to Greatness By Tim Grover**

2. **Kobe Bryant ON Valuetainment and his Toughness**
    I. **Be Extremely Curious, trivial things should not pull my attention. It had the things that I have a purpose I am interesting in, and anything outside the line, you should not have a time for.**
    II. **Have focus on one thing , and do not be multitasking or distracting yourself with trivial things.**
    III. **Every thing you see, like tv shows, reading books, people I talk to. Everything I will learn to Master My craft, when you have this point of view, you literary the world becomes your library to help you to become a master of your craft. Because you know what you looking for the world gives the exact information you need to prepare for mastering the craft.**
    IV. **Never hang out with people just to hang out.**
    V. **Get over yourself, it is not about you, and you feel embarrassed, it not that important. Then you need to ask yourself why this mistake happened. Look at this with rationale and alter anything needed to not make the same mistake.**
    VI. **Kobe Making Decision: A. Does the person understand the business. B is the business that you can help in some form of shape. C what is the barrier of entrance to the business. D Entrepreneur itself, if he obsessed, do the company have a culture that you believe is sustainable, are these leaders that you believe in. E do they have a culture of obsessiveness.**
    VII. **If you tired, then suck it up and go further and no complain and no excuses. You need to lead by example. If there is an obstacle, then you need to show to kids that this will be overcome. Parents needs to lead by example, not just talking, but show them.**

VIII. When you do Deep work, Study and as employee working, switch the mind to something else, switch the mode to something else. Maximus from Gladiator, picking up the dirt, smelling the dirt, it is go time. This is mental switch. Put Yourself in the cage and focus on the task. Once you finish, you become different person. While you in the cage, do not let distraction take away focus from you.

IX. Pain Tolerance is one of the biggest factors of someone who can handle pressure. The whole idea pressure is pain. The Pain Can be a lot of other things like embarrassment, real pain. This is one of the way is to measure someone toughness.

X. Preparation: tough people also prepares for the pain that is going to come. Preparation is a measure of toughness.

XI. Toughness is also practice the endurance of the pain. Practice, Practice, Practice.

XII. Do not advertise your pain to the world to know your pain. Man are tough are not looking for attention.

XIII. Life is a constant Test on Daily, Weekly, monthly, Yearly Basis. When you been tested, this measures your toughness.

XIV. Soft Person does not have backbone, and when they are cornered, pushed and shoved they quit. Soft claims their values, but when the tough times comes, compromise their values. Ask Myself How Do I react when the tough times comes.

XV. Tough people do not over react to the problem and issues.

3. **Kobe Bryant 10 Rules of insane work Ethic:**
    I. **Be Driven: be driven and always try your best in any situation. If you tired, then suck it up and go further. And no complain and no excuses.**
    II. **Work Helps You grow: Outwork everybody else on the team, or in Gym.**
    III. **Outwork Everyone: Try to prove that I was better then anybody else in the craft. Wake Up Early and Go To Bed Early. Get the competitive advantage by Waking up early and do the work.**
    IV. **Love What You Do**
    V. **Make One Move at A Time:You have to put one foot in front of the other. Focus on the day task. You have to have a plan in place, how you going to improve for each day to get better and stick it to the plan and trust the plan, that this brings to the end result.**
    VI. **Have A schedule**

4. **Kobe Bryant 10 rules of success:**
    I. **Make Sacrifices: We are all can be Masters of our craft, but you have to be willing to make Sacrifices, that comes along to make that decision.**
    II. **One move at a time: you can draw lessons from different things, as the world become your library. You could see the vision of the end result, you need to make one step at the time**
    III. **Trust your skills: You have to be fearless to take the shots, because if you miss the shot, then you have to deal with criticism. Trust your skills, trust the work you put in.**
    IV. **Use your scars as weapon: use the things in life, use those moments as weapons**
    V. **Focus on each day: You have to put one foot in front of the other. Focus on the day task. You have to have a plan in place, how you going to improve for each day to get better and stick it to the plan and trust the plan, that this brings to the end result.**
    VI. **Do not be afraid of confrontation: do not be afraid of confrontation to get us, where we need to go. If you are leader, you not just singing Kumbaya, but held others accountable, even having that moment being uncomfortable.**
    VII. **Be competitive when it's hard: It takes true competitive person to get up when you down and continually compete.**

VIII. Just keep going:

IX. Thrive on being outsider

X. Compete with yourself: Have competitive drive to be better everyday. Put hard work on daily basis. Work on your craft day in and day out on the craft when no one is watching.

XI. We don’t quit. We don’t cower. We don’t run. We endure and conquer

Step 213- Michael Jordan Toughness

1. **Books Michael Jordan Toughness and Work Ethic**
    I. **Relentless_ From Good to Great to Unstoppable By Tim Grover.**
    II. **Winning_ The Unforgiving Race to Greatness By Tim Grover.**
2. **Good Competitor evaluates his opponent, understanding for what he really is. Never give the competitor confidence, try take all the time. Mentally I need to trick myself to find the motivation. I need to look inside myself try to find the challenges, I need to look who I am competing against.**
3. **Practice if you are playing in the game, so when the moment comes in the game, its not new to me. That's the reason why you practice, thats the effort, so when you get to that moment, you do not have to think, instinctively things happen.**
4. **Jordan's 10 rules of success:**
    I. **Keep Working Hard: Everyday be the first person there, before the son, Jordan would be there and the last person leave every night. Work to get better every single day on the craft.**
    II. **Ignite the fire: Awaken a person inside of me to excel to be one of the best or be best/**
    III. **Be different: want to excel in my craft and isolate in my craft from everybody else, that I am more than just a few dimensional.**
    IV. **Fail your way to success: Jordan missed more than 9000 shots in his career, lost almost 300 games. 26 times he been trusted to take the winning shot and missed. He failed over and over in his life. That is why he succeed/**
    V. **Have high expectation: see always where to improve in the craft.**
    VI. **Be positive**
    VII. **Be who you were born to be.**
    VIII. **Have vision: mentally have a vision, to finish that we have to obtain. This will test your will to succeed**
    IX. **Stop making excuses**
    X. **Practice: Practice if you are playing in the game, so when the moment comes in the game, its not new to me. That's the reason why you practice, thats the effort, so when you get to that moment, you do not have to think, instinctively things happen.**

Step 214-Tim Grover and Work Ethic

1. **Books By Tim Grover Toughness and Work Ethic**
    I. **Relentless_ From Good to Great to Unstoppable By Tim Grover.**
    II. **Winning_ The Unforgiving Race to Greatness By Tim Grover.**
2. **Different between coolers, closers and cleaners**
    I. **Coolers, Closers, and Cleaners: Good, Great and Unstoppable. For his own thinking, Grover devised a three-tiered system that can be applied to any group of individuals: your friends, your family, your co-workers, your team, etc. As Grover says: "Everyone has a different definition of personal success: some people allow life's circumstances to decide what they want and say "good enough" when they get it, and then there are a select few who can't even define success because they keep raising the bar on what that means. Coolers, Closers, and Cleaners." He finds that most people are Coolers, a small percentage are Closers and perhaps there may be a Cleaner in the group. But once you meet the Cleaner you will never forget him/her. Seeing as how the rest of this post will be focused on the relentless 13, which are the traits of cleaners, we will only discuss coolers and closers here and save cleaners for later. Grover describes…**
    II. **COOLERS** as:**"A Cooler is careful; he waits to be told what to do, watches to see what everyone else is doing, and then follows the leader. He's a mediator, not a decision-maker; he's not taking sides unless he's forced to. He can handle a certain amount of pressure when things are going well, but when things get too intense, he kicks the problem over to someone else. He can make a huge play, but he's not ultimately responsible for the outcome. He's the setup guy, keeping things cool until the Closer or Cleaner can take over."**
    III. **CLOSERS** as: **"A Closer can handle a lot of pressure; he'll get the job done if you put him in the right situation and tell him exactly what you need him to do. He'll study all sorts of scenarios so he can anticipate what might happen, but he's uncomfortable when faced with something unexpected. He seeks attention and credit, and he's very aware of what everyone else is doing and what others think of him. He loves the rewards and perks associated with his fame and would choose financial security over winning**

or success." The main difference between the three is that the Cleaner never needs a kick in the ass while everyone else does and we will see why that is in the next section regarding the relentless 13, or the 13 traits of a cleaner.

IV. The Relentless 13 Grover explains that every Cleaner he has ever known has some combination of the traits below. Not every Cleaner has every trait all the time, but every Cleaner has experienced at least some of them at some point. He admits that some may intrigue you and some may repel you, but each of the relentless 13 will contribute to your ability for being relentless. By the way, he labels each #1 as none is more important than another. In case you are wondering why he calls them "Cleaners", it's because rather than blaming others when something goes wrong, they take responsibility, clean up the mess, and move on. While Grover dedicates a full chapter to each of the relentless 13, I will simply touch on an important idea that I took away from each. And if you want to delve deeper, which I recommend, you can check out the entire book. The relentless 13, when you're a cleaner…

3. **Tim Grover 13 rules of Relentless (cleaner):**
    I. **You keep pushing yourself harder when everyone else has had enough.Grover touches on the exact point we made in a recent post in that to experience success it is critical to be comfortable being uncomfortable. In other words, cleaners do stuff every day they don't want to do, pushing past apathy, fear, and laziness.**
    II. **You get into the Zone, you shut out everything else, and control the uncontrollable. Grover explains cleaners with respect to the Zone as follows: "But once a cleaner steps into the Zone, he's detached from everything on the outside. Whatever else is going on—personal, business, anything—it can't affect him until he's ready to return. That, by definition, is the Zone. No fear, no intrusion. Total concentration. You're not thinking, because thinking turns your thoughts on to everything, and the Zone is about the opposite, turning your thoughts off to everything except the task at hand. Thinking takes you away; the Zone keeps you where you need to be."**
    III. **You know exactly who you are. This one is about instinct and taking action. Cleaners are so ready and so prepared that they take what they have learned, and their thought moves straight to their gut, instinct takes over and they put it into action.**
    IV. **You have a dark side that refuses to be taught to be good. Grover believes all cleaners have a dark side somewhere deep within them. He describes it as "Deep inside you, there's an undeniable force driving your actions, the part of you that refuses to be ordinary, the piece that stays raw and untamed. Not just killer instinct." He believes that cleaners embrace their dark side by being able to drop all their inhibitions and allow themselves to do whatever it is they need to do, the way they want to do it – instinctively and without fear.**
    V. **You're not intimidated by pressure, you thrive on it. He believes being called "clutch" is an insult and that there is no such thing as having a "clutch" gene. The reason being is that being called "clutch" means you only step up at the last minute while being a cleaner means you are always stepping up. You are always keeping the pressure cranked up, but it is internal pressure as a cleaner is always hardest on themselves.**

VI. **When everyone is hitting the "In Case of Emergency" button, they're all looking for you. Cleaners always know they will be ok no matter what happens they are confident that they can handle anything. If things don't work out, they recognize what isn't working and are flexible enough to adjust, adapt and move on.**

VII. **You don't compete with anyone, you find your opponent's weakness and you attack. I like how Grover contrasts cleaners with coolers and closers when he says: "A Cooler wonders what's going to happen. A Closer watches things happen. A Cleaner makes things happen."**

VIII. **You make decisions, not suggestions; you know the answer while everyone else is still asking questions. Cleaners make a plan that reflects their goals and interests and then they execute. As he says: *"Figure out what you do, then do it. And do it better than anyone else.***

IX. **You don't have to love the work, but you're addicted to the results. Being a cleaner involves a lot of hard work and part of it is understanding what you need to sacrifice to do that work. You need to be able to keep your eye on the mission and control whatever is trying to pull you away from it. Cleaners are not distracted by instant gratification as they are focused on the long-term payoff.**

X. **You'd rather be feared than liked. Cleaners are very upfront and straight-shooters and will tell you what they think whether you like it or not. I love how he says: "Fear and respect: let them know you were there by your actions, not your words or emotions. You don't have to be loud to be the focus of attention."**

XI. **You trust very few people, and those you trust better never let you down. Cleaners are surrounded by those who want them to be successful and who understand what it takes to be successful. Those who aren't following their dreams themselves likely won't support you in your pursuit of yours and they will tell you the same negative stuff they tell themselves.**

XII. **You don't recognize failure you know there's more than one way to get what you want. Cleaners are always trying to improve. They don't believe in failure because they never believe anything is over. If something doesn't go as planned, they learn from it, change direction and try a different way.**

XIII. **You don't celebrate your achievement because you always want more. A Cleaner believes they have zero limitations and are always demanding more**

of themselves than anyone else possibly can. This means that they are always thinking of how they can do more and get better. As Grover says: *"The drive to close the gap between near-perfect and perfect is the difference between great and unstoppable."*

4. **Winning by Tim Grover**
    I. **Whether you're an athlete with championship dreams, an entrepreneur building a business, a CEO managing an empire, a salesperson closing a deal, or simply a competitor determined to stand in the winner's circle, *Winning* offers thirteen crucial principles for achieving unbeatable performance. This book reveals the truth about the obstacles and challenges that stand between you and your goals: Winning never lies. Winning knows your secrets. Winning wages war in the battlefield of your mind. Winning wants all of you. And more. If you're addicted to the taste of success and crave more, then you're ready for *Winning's* results-driven performance strategy. And if you're already winning and want to learn how to execute at a level that will establish you as one of the greatest—so you can own not just *this* moment, but the next, and the next—this book will show you the path.**
    II. **Kobe Bryant. Everything Kobe did was about winning. Winning is everywhere. Every moment. You have the opportunity to win. Grover describes winning as brutal, never ending and relentless. Any book with a title like "10 easy steps to winning" is a fraud. There is nothing easy or simple or predictable about winning. The book doesn't tell you what to do. You know what to do. *Winning* paints a picture of exactly what winning is, and the kind of attitude you will have to adopt if you want to win again and again and again. Winners, or "cleaners", never stop chasing greatness. There is always more.**
    III. **THE LANGUAGE OF WINNING. Winning doesn't bullshit. Grover isn't about "motivation". Anyone who really wants to win drives themselves. It is a given. Anyone who needs a book or a speech to give them temporary motivation is missing the point. The book isn't here to tell you that "You got this!" or "everyone's a winner!". The book is about showing you the brutal, unforgiving, uncertain path that anyone who really wants to win must walk down. The unbearable loneliness, exhaustion and fear. There is nothing normal or typical about the lifestyle of a real winner. Normal people don't stand out. Normal people go where everyone else has gone. Winning is in everyone, but for most people, it will never be shown because of all of the fear and worry and doubt. The way you talk about winning will show you where you are at with regard to actually winning. "Look at these definitions**

of winning again. Uncivilised. Hard. Nasty. Unpolished. Dirty. Rough. Unforgiving. Unapologetic. Uninhibited. Everything. If that describes your journey, and how you attack your goals, we are speaking the same language."

5. **13 Definition of Winning**
    I. **Winning makes you different, and different scares people. Grover talks about the importance of knowing how to think for yourself, as opposed to being told what to do and accepting the norm. Every great development in humanity came as a result of someone thinking for themselves and not just accepting the world as they were given it. “Winning requires you to learn, and then question what you learn, and then learn more. You have to be willing to challenge what you’ve been taught” Grover also talks about the concept of non-negotiables, and how they can hold you back in your journey if you are not careful. For him, the only non-negotiable is performance. Everything else is there to be looked at and scrutinised. Nothing is off-limits for people who really want to win.**
    II. **Winning wages war on the battlefield in your mind. “I don’t have a better way to say this. Winning Fucks with your mind. It just does” The writer talks about the non-stop mental warfare that takes place in the mind of every winner. You are exhausted and impatient and on the edge all the time, even when you rest. The message of this chapter reminds me of a quote I came across once: “Hustlers don’t sleep. They nap” Your brain is like a minefield that is yours to dominate. You must be aware of your own insecurities, distractions and weaknesses if you are going to stay in control. “If you decide something is going to be a problem, then it’s going to be a problem” This is a chapter about the mindset of a winner, but not in that positive rah rah self help sense. It is a real, honest look at the lengths we have to go to if we are to stay on the winning path. Grover also talks of how winners control absolutely everything that they can, with the expectation that there will be plenty of unexpected challenges that they will have to overcome in the moment.**
    III. **Winning is the ultimate gamble on yourself. This chapter is really about confidence. The chapter details the similarities and differences between Kobe Bryant and Michael Jordan. Grover knew these players personally probably better than anyone in basketball, and his insight is pretty cool. He talks of how for all of their differences, both Kobe and Michael shared unshakeable confidence in themselves and their ability to get the job done when the time came. They never buckled. Their ability to bounce back from a loss. Their ability to ignore the negativity of the media. Their ability not to**

be overpowered by more physical players. They always knew that they could come out on top. It defined their greatness. This belief went way beyond basketball. Michael became the first player to become the majority owner of a team after he retired. He started numerous business ventures. He competed on the golf course. Kobe learned 5 languages. "Everything he did was about his massive belief in himself" Grover talks of how truly confident people cannot be broken. They have been beaten down and broken over and over by life and their goals, and they have ploughed through every obstacle that life has thrown at them. People like that truly back themselves when the pressure is on.

IV. **Winning isn't heartless, but you will use your heart less. "Winning has a price, and that price is that your mind must be stronger than your feelings" People talk about how brutal Michael Jordan was in training with his teammates. To the untrained eye, you might be forgiven for thinking that he was a bit of a c*nt. But think about it. He won 6 rings. He is etched in basketball history, and he bought his whole team with him. We all know about Scottie Pippen, and Steve Kerr, and Dennis Rodman, because of the rings that they won under the leadership of Michael Jordan. That kind of greatness doesn't have the time to worry about your feelings and emotions. Your mind knows exactly what to do. Your weakness often comes from your feelings. You know you need to work out. Your feelings get in the way. You know that you should consistently post. You feel exhausted. Self-control is all about controlling your thoughts, in order to control your emotions, in order to control your actions. Control what you can control. Michael wasn't emotional when he was angry. He was cold and unemotional. He was aggressive, but he was absolutely in control. That is a dangerous combination.**

V. **Winning belongs to them, and it's your job to take it. This chapter is all about competition. Have you ever been accused of being overly competitive? Or having a competition problem? Grover wants to challenge you to be OK with that. The greats never stop. There is always another challenge. Why do you think all the great boxers keep fighting until they are a shell of their best selves? It is in them to fight and compete. There is nothing else like it. Competition drives us all. To compete every day is to get the most out of every single day. We are all hard-wired to win. You**

cannot teach competitiveness, and you cannot make other people want to win. You may inspire it, but ultimately it is a completely internal and personal fight. You must want to win, with all of your being, for yourself over anyone else.

VI. **Winning wants all of you; there is no balance. "Time for everything equals time for nothing" Winning wants all of you. It demands obsession. The whole work-life balance thing doesn't really mean a lot to people who badly want to win. When you are obsessed with achieving greatness in one area, that usually comes at the expense of most of the things everyone considers normal and healthy. Being the best requires hard sacrifices, and it is never going to be easy. There is no perfect future where you can have greatness in your field, and a great family life, and great holidays, and loads of sleep, and loads of friends. Winning wants all of your time and attention. There is no balance for those who want to win. Stop looking for it, and stop feeling guilty about your lack of it.**

VII. **Winning is selfish Why is it so wrong to be considered selfish? Self literally defines who you are. To invest in yourself, love yourself, be yourself, all sound like a great thing. To be selfish has such a negative ring to it. But what is the difference really? How is it a bad thing to be concerned with your own results and success? This chapter convinces us of the absolute necessity for someone who wants to win to be selfish. The chapter also makes an important distinction; there is a difference between selfish winners and selfish losers. Selfish losers take from everyone, and everyone else is better off without them. If you are selfish but not concerned with winning, then you are just prioritising your own pleasure and impulses. Selfish winners give to themselves first, so that they can ultimately give to the world. They give themselves the time, space and permission to achieve what they want to achieve because they know that their winning can lift up those around them. In order to be the most charitable person in the world, you first have to put some serious money behind you! You can't create your own wins without first prioritising your own goals and dreams. Separation is power. Separation is freedom. Winning is an investment. If you want to win, you must be selfish and invest. If you are not willing to invest in yourself, why should anyone else?**

VIII. **Winning takes you through hell; if you quit, that's where you'll stay. People think of winning as this triumphant celebration that solves everything. According to Grover, that is true only for a moment. But stay in that moment too long, and it will be the last time you ever get to experience it. Winning takes a brutal trip from the bottom. You must toil, and grind, and think, and push relentlessly through mud and sacrifice. If you dont quit, you will win. It will feel incredible for a moment. Do you want to win again? Do you want more? You must go right back to the bottom. You're not a "winner" now. Your next success must be earned, just like your last. It is relentless. Even when you do win, you are still scarred by all that you've had to go through to get there. The personal sacrifice. The lack of friends. The neglected family life. The lack of time off. The one-dimensionality of your existence. The journey to winning is so brutal, that anyone who will manage it time and time again must be nothing short of addicted.**

IX. **Winning is a test, with no correct answers Everyone experiences fear. It is a fact of life. But fear and doubt are very different. When you feel that fear, do you question your ability to get there in the end? Or do you think about how far you've come, about all the preparation you've put in, and do you stay confident in your ability to ultimately handle whatever's coming your way? This is the difference between doubt and fear. "I have self-doubt. I have insecurity. I have fear of failure. I have nights when I show up at the arena and I'm like my back hurts. My feet hurt. My knees hurt. I don't have it. I just want to chill. We all have self-doubt. You don't deny it, but you also don't capitulate to it. You embrace it." Kobe Bryant Fear is about playing to win. Doubt is about playing to not lose. Fear is pressure. Doubt is panic. Fear says you might win. Doubt says you might lose. Ultimately, winning is a terrifying leap of belief in yourself. According to Grover, there are 4 components that will determine your ability to handle fear. Talent, intelligence, competitiveness, and resilience. He goes into detail about the importance of all 4. Spoiler alert: talent is really common, and resilience is really rare.**

X. **Winning knows all your secrets One of Grover's most popular ideas from his first book is the idea of the dark side. We all have that side of ourselves that the world doesn't know about. When we are alone at night, there they are. All your mistakes, your fears, the voices in your head, all real and**

uninhibited. The writer talks about the genuine power that comes from completely incorporating your dark side and accepting your full self, rather than feeling bad or trying to change everything that isn't completely spot on. "Deep inside you, there's an undeniable force that drives your actions. The piece of you that refuses to be ordinary, the piece that stays raw and untamed. Not just instinct, but killer instinct. The kind you keep in the dark, where you crave things you don't talk about. You don't care about how it comes across to others because you know this is who you are and you wouldn't change if you could. The dark side is your fuel. Your energy. It excites you. Keeps you on the edge. Recharges you. Fills your tank. Its an addiction as powerful as your addiction to success" Kobe's dark side was the black mamba. When he stepped onto the court, he wasn't the Kobe Bryant that had legal issues and family problems. He was a cold-blooded killer that would dominate anyone stupid enough to play against him.

XI. **Winning never lies. Winning knows the truth, and it wants you to admit it. There is nothing subjective about winning. It is a score. An amount of money. A number on a scale. A decision. It doesn't matter how hard you tried, how many people were with you, or how talented you are. Ultimately it is black and white. We love to lie to ourselves: "We deserve more" "The score didn't reflect the game" "Next year is our year" "We're going in the right direction" If these statements aren't rooted in anything measurable or objective, they are usually just excuses for us not doing what it took to actually win. You can put your time into convincing yourself that you are a winner, or you can put your time into being honest with yourself, changing your course, taking the right actions and then actually winning. You cannot do both. This is one of my favourite ideas from this whole book: Stop talking. When you win, you don't need to talk. If you win, that will do the talking for you. If fake it till you make it is your strategy for success, you aren't going to get anywhere. Winning doesn't buy your lies, and most people don't either.**

XII. **Winning is not a marathon, it's a sprint with no finish line. Don't manage your time. Manage your focus. Think about the Olympic marathon. These are the worlds best athletes. When they are competing for the gold, do they chill for any 1 of those 26 miles? Is there ever a point where they just take it easy? They are patient, they aren't stupid, but they squeeze every second**

that they can out of every mile of the race. Slow down. Take your time. Pace yourself. If your goal is to finish, this language makes sense. If your goal is to win, this language is stupid. “Rome wasn’t built in a day. No, it wasn’t. It was built every single day, for thousands and thousands of days” Many people are intrigued by the massive success of someone like Kobe Bryant. How was he able to achieve just so much? According to Grover, it was mainly due to his rare ability to focus on whatever it was he wanted, unfalteringly, until the moment he got it. He didn’t party. He didn’t have hobbies. He trained, and then he recovered, and then he trained, all the way up to the last game of the finals. There was no slowing down. “I never lost a game, I just ran out of time” Michael Jordan Winning doesn’t care if you dont have time. Winning expects you to make time. If you’ve only got so much time to achieve what you want to achieve, all you can do is choose what you focus on. If you want to win that badly, all of your focus should be spent doing what it takes to win.

XIII. Winning is everything “Long term goals are great, but long term isn’t promised to anyone. Your skills and energies have an expiration date. If you want something, go get it now.” Grover talks in this chapter about the importance of a sense of urgency. He reckons it is ultimately the difference between those that win and those that watch others win. Kobes impatience was legendary. Zero tolerance. Ultimately, winning is your legacy. It is what you’ve done. It is the mark you’ve left on the world. Every day, your time grows shorter. Tim Grover’s message is simple: Do everything. Experience everything you want. Go and achieve your goal. Do not settle or slow or pace yourself. Push. Life is a daily campaign against laziness and the urge to quit. We are all human. It would be so easy to just fit into normality. But if you are going to win, you must keep going. Every day, you keep going. The pursuit of winning is what life is about. It is the pursuit that costs everything but gives everything.

6. **Books on Mental Toughness.**
    I. **Develop Mental Toughness to Perform.**
    II. **Develop mental toughness.**
    III. **Self Discipline mastery.**
    IV. **Execute Toughness, the leadership performance.**
    V. **Intensional Mindset, developing Killer Instinct.**
    VI. **Mindset of Champion.**
    VII. **Mamba Forever.**
    VIII. **Mental Toughness for Runners.**
    IX. **Self Disciplinary.**

7. **Books on Work Ethic.**
    I. **Christian Authors.**
        - **Luther on Vocation.**
        - **Teaching Of Luther and Calvin About Ordinary Works Part 1 and 2.**
        - **Christian Work Ethic.**
        - **A THEOLOGY OF BUSINESS: A REFORMED PERSPECTIVE ON THE BASIS AND APPLICATION OF CHRISTIAN ETHICS IN BUSINESS.**
        - **TOWARDS A CHRISTIAN ETHIC OF WORK IN SOUTH AFRICA.**
        - **Calling A biblical Perspective of Work.**
        - **Every Good Endeavior by Timothy Keller.**
        - **Christian AND Work.**
        - **5 Commands for Business Ethics.**
        - **Calling of Faith and Work.**
        - **Treatise of Vocation**
        - **Quakers in the Contemporary Workplace.**
        - **Religious Tradesman.**

    II. **Non Christian authors.**
        - **Revive Work Ethic.**
        - **How to Build Strong Work Ethic.**
        - **Work Ethic for Development Profesional**

8. **Work Ethic:**
    I. **Be Predictable: Good Work Ethic is the person who is predictable every day, like you show up at 8 am and leave at 17h and do this every day. Show up every day without disruptions.**
    II. **Consistency: You show up every day consistently. You keep show up and keep doing the work.**
    III. **Preparation: Do Proper Planning A Month, Week, Few days and night before which helps to prevent poor performance. The most prepared wins.**
    IV. **Do More: Stay back and do more work, and put effort to achieve the results I want. If the person makes 100 calls a day, you need to do 200 calls a day. If the person sells 20 products, you sell 40 products. If somebody practices 3 hours, then you do 5 hours. Do A little bit more.**
    V. **Now Mentality. Subscribe to the Now Mentality. Means if you want to call tomorrow, then call it now and today.**
    VI. **Find Running Mates: Find a person with the same mentality, who pushes you to do better and more.**
    VII. **Don't fall for Work Smart: Do not fall for the work smart only concept. You need to work very hard.**
    VIII. **Cut off Distractions: Cut distractions, do not involve into office politics, but come to do performance. If there is office politics, then you go perform instead involve into office politics.**
    IX. **Absolute Focus: Train your mind to Focus. Use Deep Work by Cal Newport to do the deep work. The absolute focus is when you take away distractions, and start to focus on the task of deep work. Example Reading a book, you need to read as many times as possible to try to understand and Follow and Apply Rules of reading to that reading or task. Train your brain to be focus , because your brain is muscle. Stop Making Excuses that you cannot focus, but practice focusing on daily basis.**
    X. **Have To Do List: Good Work Ethic person has a to do list. In my Case Use deep work routine with 80/20 RULES, Eat ThatFrog AND Eisenhower Matrix this is my to do list, as it shows exactly what needs to be done and list of TO DO List***
    XI. **Eat Right: Work Ethic requires energy for you to last long time, stamina, efficiency. Use Keto Diet, Intermittent Fasting and Exercise on Daily basis.**

XII. **Plug the Leaks: Plug the leaks is the time wasters in my life and my work life.**

XIII. **Cut the Fat: cut the fat means that the works that do not need to be done or somebody else can do it. Turn off the Facebook and snapchat and social media. Ask myself if the work I have done and effort put, lead to increase in the results?**

XIV. **Drop Perfection: Do not seek for perfect time, or perfect environment.**

XV. **Avoid burnout. Have your own Escape.Gift Yourself**

9. **Tim Grover**
    I. **Master of your craft and be expert of my craft. Do not try to become experts of everything. Do What You do. Do not Jump from one thing to another. You have to Master whatever you are going to Master. Once you Master one part of the craft, then move to another part of your craft and master that part of the craft.**
    II. **Competition never ends. The winning then manifest into something else.**
    III. **Do not stay in the middle and get out of the comfort zone.**
    IV. **Winning doesn't have any friends, it has allies.**

Step 215-Focus and Books On Focus For Deep Work

1. **Books on Focus and Concentration For Deep Work.**
    I. **Atomic Habits By James Clear**
    II. **Deep Work, Rules for Focused Success in A distracted World.**
    III. **Focus on Hidden Drive of Excellence.**
    IV. **18 minutes find your focus master distraction-and-get-the-right-things-done.**
    V. **Focus-use-the-power-of-targeted-thinking-to-get-more-done.**
    VI. **Master-of-one-find-and-focus-on-the-work-you-were-created-to-do.**
    VII. **The-art-of-being-indispensable-at-work-win-influence-beat-overcommitment-and-get-the-right-thing.**
    VIII. **Focus__A_Brief_Guide_on_How_to_Improve_Focus_and_Concentration.**
    IX. **Power Of Focus**
    X. **Hyperfocua**
    XI. **How to Become Straight A student**
    XII. **Ultralearning**

Part 36: Deep Life, Deep Work and Benjamin Franklin Daily Routine

Step 216-Deep Life, Deep Work and Benjamin Franklin Daily Routine.

Documents That Will Stay At Home and Documents That Will Be Brought to Work.

1. **Documents Leave At Home.**
    - **A. Quarterly Planning.**
    - **B. Weekly Planning.**
    - **C. Project Tracker.**
    - **D. Values.**
    - **E. Personal Code of Conduct.**
    - **F. Professional Code of Conduct.**

2. **Documents Bring To Work.**
    - **A. Daily Planning.**
    - **B. Calendar.**
    - **C. Habit Tracker.**
    - **D. Journal.**
    - **E. Headphone.**
    - **F. Phone.**
    - **G. Documents How to do TimeBlocking.**
    - **H. Deep Life and Deep Work.**
    - **I. Document On What Training Do I Do On Daily Basis.**

Documents That I will Use on Daily and Weekly Basis and Other Times For Reading or Listen.

1. Documents Use On Daily Basis.

A. **Deep Life and Deep Work Document.**

B. **Rules of Reading 1-12. Additionally Documents that can Be Use for ALL other Rules of Reading.**

- **Rules of Reading 10a to 10k.**
- **Logic Books 1-7.**
- **Grammar Books 1-3.**
- **Writing Books 1-8.**

C. **Bible Study and Devotional Books 1-3.**

D. **Marriage Books.**

E. **Reflect, Review, Journaling and Visualisation Document.**

F. **Health For Checking food, minerals and vitamins to eat and Drink**

2. Documents Use On Weekly Basis.

A. **Value Documents By Which I live.**

B. **Personal Code of Conduct For Personal Life.**

C. **Professional Code of Conduct for Professional Life.**

D. **Reflect, Review, Journaling and Visualisation Document.**

3. Documents Use For Other Time Basis.

A. **Deep Work.**

B. **Deep Studies.**

C. **Studies.**

D. **Learning.**

E. **Parenting.**

F. **Habits Books 1-6.**

G. **Church Books.**

H. **Stoicism.**

I. **Communication.**

J. **Classical Books.**

K. **Finance.**

L. **Other Topics And Books.**

Stage 0:Core Systems

First Things First: Your Personhood Precedes Your Productivity. Good productivity system is a tool to serve the whole person. Your personhood comes first! Your productivity system is there to serve you, not the reverse.

Below are summaries of the **Two** main categories that contain the elements of my core systems: **Core Documents And Core Productivity.**

List Of The Items I need To Have.

Quarterly

- **Pen.**
- **Ruler.**
- **Quarterly Planning.**
- **Value Document.**
- **Project Tracker.**
- **Calendar.**
- **Deep Life and Deep Work and Benjamin Franklin Routine.**
- **Task List.**

Weekly

- Pen.
- Ruler.
- Weekly Planner Notebook.
- Quarterly Planner Notebook.
- Value Document.
- Project Tracker.
- Calendar.
- **Deep Life and Deep Work and Benjamin Franklin Routine.**
- **Task List.**

Daily:

- Pen.
- Ruler.
- Daily Planner NoteBook.
- Deep Work NoteBook.
- Habit Tracker.
- Project Tracker.
- Calendar.
- Journaling, Review, Reflect Notebook.
- Value Document.

- **Deep Life and Deep Work and Benjamin Franklin Routine.**
- **Task List.**

List of Items That Stays At Home.

- **Value Document.**
- **Weekly Value Plan.**
- **Journaling, Review and Reflect Notebook.**
- **Weekly Plan Notebook.**
- **Quarterly Plan Notebook.**
- **Project Tracker.**

List of Items That I have With Me.

- **Daily Planner Notebook.**
- **Weekly Plan Notebook.**
- **Monthly Calendar.**
- **Habit Tracker.**
- **Pen.**
- **Ruler.**
- **Deep Life and Deep Work and Benjamin Franklin Routine.**

Core Documents

1. Discipline-Internally Powered Efficacy (Productiveness).

Rule 1- Check Disciplines Once A Year During My Birthday, and Review How I am Doing and What next Disciplines I need To Do It For Next Year.

Rule 2-Define your non-negotiable: Identify a few daily activities that requires Discipline that are crucial for your well-being and make a commitment to do them every day.

Rule 3-Take few things and think how can I make progress everyday. If its too hard find something easier.

Rule 4-Set up organizational systems: Choose tools that will help you stay organised, such as a planner, calendar. Consistently use these tools to manage your time and tasks.

Rule 5-Create a routine: Establish a daily routine that incorporates your non-negotiable and gives structure to your day.

Rule 6-Get Metric And track if Done This discipline.Sometimes track the execution of these disciplines with metrics Such as Exercise or How many hours of Deep Word I have done today.. Sometimes I take a break from this tracking.

2. Values- External Powered.

In this Part of the Document I will Write My Roles and the Values by which I try to live each of them on Daily Basis.

Rule 1-Identify and Write Down List Of Roles and The Values You Associate With them and by which I Try To Live on Daily Basis. Take some time to think deeply about what values are most important to you.

Rule 2-Write My Roles and The Values By which I Try To Live Each Of Them On Daily Basis:

I. **Step 1- Identify Specific Actions, Specific Habits or Behaviour, that go with Actually living out your values.**

II. **Step 2- Write First Person Narrative, What or How I want to be or act in that role that narrative implicitly captures my value. This way of Writing Makes The Value Concrete. Example:**

   A. ***Roles:*** **"I want to be the kind of Husband, Parent and friend who …*A values-based behavior related to the role*: "…who listens when the people I love want to have a conversation with me."**

   B. **C*oncrete values-based action*, "When people I love want time with me, and I am just fiddling on the computer or my phone, I lock or shut down the tech toys and walk away, so I can be truly present with them." (If I am working intensely on something, I might ask that we talk a little later.)**

   C. **The key is that I've expressed my value as an action, a measurable behaviour: I either turn away from scrolling through my phone and turn toward my family member — I live out that values-based action — or I do not.**

III. **Step 3-Example of Writing**

1. **Value:**
    A. **Example of Writing.**
    B. **A Value Based Behaviour To The Role.**
    C. **Concrete Value Based Action.**

Rule 3-Create a personal code: Write down your values and create a personal code that you will live by.

I. **Step 1- Use the Words "Always" and "Never" to Help You Write Down a Personal Code of Conduct. Example.**

    A. ***I don't commit verbal violence toward anyone, including myself."***

Rule 4-Review The Core Values on Daily, Weekly and Quarterly Basis.

Rule 5-Ask Yourself Am I following The Value Document. Are They Align with My Quarterly, Weekly, Daily Plan?

Rule 6- Add New Values and Personal Conduct in Value Document.

I. **Personal Code Of Conduct.**

    A. **Personal Life.**

        • **Behavior.**

        • **Moral and Ethics.**

    B. **Professional Life.**

        • **Behavior.**

        • **Moral and Ethics.**

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply To Create Daily Planning.

Stage 1-Core Productivity.

2. Update Career and Personal Strategic Plans (Quarterly Planning) Once Every Semester

Rule 1- Every Quarter Planning is Based On The Following:

I. **My Value Document.**

- **Values I want to Practice for the Quarter.**
- **Professional Code of Conduct, I would Like to Practice for The Quarter.**
- **Personal Code of Conduct, I would Like To Practice for the Quarter.**

II. **My Project Tracker.**

III. **My Calendar.**

Rule 2- Review, Value Documents, Project Tracker and Calendar. Once Done, Add on the Quarterly Planning Tasks and Goals Based on those Documents.

Rule 3-When Planning For Quarter, this planning must have intention.

Rule 4-Create One Plan with two parts. One Part is for Professional Life and Other Part is Non professional Life.

I. **Step 1- General Principle: Better To Plan Less and Actually Carry Out. Do not Schedule Too Much on Quarterly Basis Have Realistic Schedule. Use Slow Productivity Approach To Setting Up Goals.**

Rule 5-When Lay out The Strategic Plan or Quarterly Planning For Professional Life and Non Professional Life, Have Values Document. Ask Yourself, are the Strategic Plan or Quarterly Planning for Professional Life and Non Professional Life Align with My Values in the Value Document And Personal Code of Conduct and Professional Code of Conduct. In other words watch my plans for pursuing those parts of my life in the way that it is true to my values. If There is and Extended Plan, I will Do Following:

I. **Sometimes these will also link to an extended plan when I have a big enough, long enough pursuit that it might need its own space. In other words, if there is particular Big project or initiative that I am working, will describe in its own document and linked to it from professional Strategic Plan.**

Rule 6-Maintenance (How Will I update These Documents).

I. **I review my strategic plans (and extended plans) once a week, preferably when doing my weekly plan). I can tweak them at any time, but I try to give them major overhauls roughly once a semester (fall, winter/spring, summer.**
II. **I sometimes maintain an idea notebook and/or digital idea storage system keeping thoughts on values and strategic plans. I should review this in detail, at the very least, when I do my strategic plan updates.**

Rule 7-There are Two Ways I will Write the Quarterly Plan. Choose One of the Way I will Do it. Embrace whatever format seems most useful for the particular Quarter you are planning.

Rule 8a: Either Plan My Quarter For Each Month, And What I will Do On that Specific Month Based On Time Time Available On Time Block On Quarter Planning

Rule 8b. Or I will Plan My Quarter When, There is No Major Appointments, Meetings or other scheduled obligation that break up my Day, I will Plan based on simple heuristics: like 3 hours of deep work a day and a list of things to schedule each Month into the time that remains.

Rule 9: No Matter what Way Will I plan my week, the most important is Always Decide in Advance What I am Going To Do With My Week. These Decisions Look Different at the different time of the year, but what matters is that when it comes to my schedule, I AM IN Charge.

Example: Quarterly Plan #1

October

After weekly planning do a focused task block to get out ahead of the small things on my lists for the week. Be sure in this block to finish <specific 20-minute task that is time sensititve>

Prepare a lecture for <my fall class>

End the work day with a 1 – 2 hour writing block.

Today is a research day: head in the office right away to dig into <research project>.

End day with 1.5 hours in <a favorite secluded spot on campus>, where the first hour is writing and the last thirty minutes is a batched attack on tasks.

November

I have a training seminar to attend in the morning and a meeting with my student in the later afternoon. Between these two events focus on prepping another lecture.

Depending on the length of my afternoon meeting, I may be able fit in a task block before coming home.

December

First thing in the morning do budget and take care of <related annoying financial task>. The goal is to finish before <doctor's appointment near where I live>

After the doctor's appointment find a quiet place to work deeply on <research project>.

End day somewhat early for <yard work project>

Write. Deep work on research until mental burn out. Shutdown for weekend. Finish <yard work project>

The above weekly plan represents the most common format I use: sketching my goals for QUARTER. Notice, I'm not simply listing things I want to get done each Quarter, but instead, I will Review Calendar, Value Plan and Project Tracker, and then decide what I want to Achieve Each Month. A big part of the Quarterly planning process is working backwards from your calendar to fill in the open time effectively.

Example: Quarterly Plan #2

Research

Carve out three hours of deep work every day for the below research tasks. This is the core of each day's schedule.

This week is do or die for getting to a final result for <a research project with an upcoming deadline.>

During downtime on this project (while waiting for responses from co-authors), see if I can push through <the final details of a different proof I'm working on.>

Dedicate one day's deep work for finishing <a journal paper review>

Georgetown Teaching/Misc

Each day, outside of the deep work hours assigned above, make progress on the below non-deep tasks.

Once my new textbook arrives, I need to decide on my syllabus for <class I'm teaching this fall> and post online.

The following small tasks are time sensitive this week: (1) pick up new parking pass; (2) send back visa letter for <a researcher I know>; (3) respond to <a colleague's> recent questions.

Writing

Use the morning block <[note: I sometimes work for an hour at home in the morning to allow traffic to die down]> and commute to plan and gather the sources I need to start writing next week.

Over weekend, write a blog post where I <reminder of post topic>

This plan adopts a different format. Because this was a summer week with no major appointments, meetings, or other scheduled obligations to break up my days (so rare, yet so wonderful), I could base my schedule around some simple heuristics: three hours a day on deep work for research, and a list of small things to schedule each day into the time that remains.

I would never get away with this approach during the height of the school year, but for a lazy week in July, it worked perfectly.

The bigger message here, however, is that I always decide in advance what I am going to do with my week. These decisions look different at different times of year, but what matters is that when it comes to my schedule, I'm in charge.

Rule-10 Do At The End of Each Month Last Saturday and Sunday. Monthly Review Of The Progress In the Quarterly Planning.

3. Productivity (Weekly Value Plan, Weekly and Daily).

Step 1 Create Weekly Value Plan.

Rule 1-Choose from the Value Document The Following:

- **3 Values that I will be Practicing for Next Week.**
- **3 Professional Code of Conduct, that I will be Practicing for Next week.**
- **3 Personal Code Of Conduct, that I will be practicing for next week.**

Rule 2- Review my values once a week and create a value plan for that week with notes about what to emphasise and perhaps experimental habits or and rules to try out that week to help keep me closer to my values. Include best practices for mental health in the value plan.

Rule 3- When Planning For Value Plan, this planning must have intention.

Step 2 Create Weekly Planning.

Rule 1- Create Weekly Planning on Either Weekend Or Weekday Begins, on Monday Morning. I deploy weekly Planning. Be flexible with Your Weekly and Daily Planning. Spend Between 30-120 Minutes, on what is upcoming for next week and decide how to tackle. When Planning For Weekly, this planning must have intention.

Rule 2-Review Values Once A week On Weekends to remind myself What are my values and my life for.

Rule 3-Each Week- Build Intentional Weekly Plan Based on a review of:

I. Value Document.

II. My Strategic Plans (Quarterly Plan).

III. My Calendar.

IV. My Project Tracker.

V. My Task Lists.

VI. My Value Plan and Personal Code of Conduct.

VII. Daily Planning.

Rule 4- Draw TimeBlocking On Daily Planning For Next Week Monday To Sunday. This Should Take Between 30-120 Minutes.

A. **Step 1 Open 2 page Planner.**
B. **Step 2 On the Left Page Draw The Line in The Middle and Write the Following:**
    I. **On Left Side Of Page Write Tasks.**
    II. **On the Right Side of the Page Write Ideas.**
C. **Step 3. Left Page DRAW Two Horizontal Lines and Write Metric Tracker.**
D. **Step 4. Draw Shutdown Box At The Top Of the Left Page. System, that helps to mind shift from work mode to non work mode.**
E. **Step 5, Discipline of Execution.**
    I. **Draw Eisenhower Matrix with 4 Quadrants.**
        - **Quadrant 1 Do It Right Now-**Task Important And Urgent. **Reactive.**
        - **Quadrant 2 Schedule It-**Task Important But Not Urgent. **PROACTIVE.**
        - **Quadrant 3 Delegate It**-Task Not Important But Urgent. **Distraction.**
        - **Quadrant 4 Delete It**-Task Not Important And Not Urgent. **Time Waste.**
F. **Step 6 On the Top Right Page. Write Date.**
G. **Step 7 On Right Top Page Of Planner, Write Philosophy.**
H. **Step 8 On Right Page Of Planner, Draw 2 Vertical Line on Left Side and Right Side, Making 3 Columns.**

I. **Step 9 Use 2 Lines To Represent 1 Hour And Write vertically Hours From 6am to 21pm and Divide The Hours of Workday Into 6 Blocks and Draw A Block That Covers Lines Corresponding to these Hours:**

- **Early Morning 5am-8am.**
- **Morning 8am-12pm.**
- **Noon 12pm-14pm.**
- **Afternoon 14pm-18pm.**
- **Evening 18pm-22pm.**
- **Night 22pm-05am.**

Rule 5- Think And Write In The TIMEBLOCKING on Daily Planning For Each Day The Common Things That I need To Do Constantly. These Are the Tasks That Needs to Be Done Usually on Daily Basis. Write and Assign Workday Activities to These Blocks And Draw The Box For That Period in The TimeBlock on Daily Planner. Example Of Those Activities Might Be:

A. **Employment.**
B. **Travel.**
C. **Bring Children To Crèche.**
D. **Collect Children From Crèche.**
E. **Any Other Tasks That needs to be done constantly On Daily Basis.**

Rule 6- Think And Write In The TIMEBLOCKING on Daily Planning For Each Day Based On Calendar. Write and Assign Workday Activities to These Blocks And Draw The Box For That Period in The TimeBlock on Daily Planner. Example Of This:

A. **Meeting.**
B. **Appointment.**
C. **Deadline.**
D. **Reminder Of Important Date.**

Rule 7-Organise The Task.

I. **When Do I add A task to My List vs Straight Into My Week Plan?**

II. **If the task or obligation pops up, and you writing down and capturing exactly what I need to do. At the End of the day you need to processing the task that needs to be done. There are two places that the task can go:**

   A. **On the Appropriate Task Board List. This is not time specific task list.**

   B. **Or Calendar. It goes on the calendar if this connected to specific day that task needs to be executed. Calendar is for time specific tasks.**

Rule 8- Review How Much Time Is Available Based On TimeBlocking on Daily Planning For Each Day.

Rule 9- Based On The Time Available On Time Blocking On Daily Planning, Plan My Week. General Principle: Better To Plan Less and Actually Carry Out. Do not Schedule Too Much on Weekly Basis. Have Realistic Schedule. Use Slow Productivity Approach To Setting Up Goals.

Rule 10-Plan Your Weekly Deep Work Timetable. This Include lectures, tutorials, your self-study sessions and group study sessions. Enter in the key assignment and exam dates. Work backward from the due date to allocate time needed.

Rule 11-USE And Apply 80/20 Principle By Asking: Is this Task in the top 20% of my activities or in the bottom 80%? Identify Most Important Task.

I. **Once Identify Task In the Top 20% input that gives 80% of Output. Then, Put 100% effort into 20% inputs, to achieve best results. Remove Trivial Tasks.**

Rule 12-There are Two Ways I will Write the Weekly Plan. Choose One of the Way I will Do it. Embrace whatever format seems most useful for the particular week you are planning.

Rule 13a: Either Plan My Week For Each Day, And What I will Do On that Specific Day Based On Time Time Available On Time Block On Daily Planning

Rule 13b. Or I will Plan My Week When, There is No Major Appointments, Meetings or other scheduled obligation that break up my Day, I will Plan based on simple heuristics: like 3 hours of deep work a day and a list of things to schedule each day into the time that remains.

Rule 14: No Matter what Way Will I plan my week, the most important is Always Decide in Advance What I am Going To Do With My Week. These Decisions Look Different at the different time of the year, but what matters is that when it comes to my schedule, I AM IN Charge

Example: Weekly Plan #1

Monday

After weekly planning do a focused task block to get out ahead of the small things on my lists for the week. Be sure in this block to finish <specific 20-minute task that is time sensititve>

Prepare a lecture for <my fall class>

End the work day with a 1 – 2 hour writing block.

Tuesday

Today is a research day: head in the office right away to dig into <research project>.

End day with 1.5 hours in <a favorite secluded spot on campus>, where the first hour is writing and the last thirty minutes is a batched attack on tasks.

Wednesday

I have a training seminar to attend in the morning and a meeting with my student in the later afternoon. Between these two events focus on prepping another lecture.

Depending on the length of my afternoon meeting, I may be able fit in a task block before coming home.

Thursday

First thing in the morning do budget and take care of <related annoying financial task>. The goal is to finish before <doctor's appointment near where I live>

After the doctor's appointment find a quiet place to work deeply on <research project>.

End day somewhat early for <yard work project>

Friday

Write. Deep work on research until mental burn out. Shutdown for weekend. Finish <yard work project>

The above weekly plan represents the most common format I use: sketching my goals for each day of the week. Notice, I’m not simply listing things I want to get done each day, but instead, I will Review How much time available on each day From Daily Routine, once inserted all the tasks from calendar and The tasks that I am doing Constantly on daily basis. I am trying to Do is match work to the time that actually available on those days. A big part of the weekly planning process is working backwards from your calendar to fill in the open time effectively. Fortunately, because this plan is for a summer week, I had lots of open time to work with.

Example: Weekly Plan #2

Research

Carve out three hours of deep work every day for the below research tasks. This is the core of each day's schedule.

This week is do or die for getting to a final result for <a research project with an upcoming deadline.>

During downtime on this project (while waiting for responses from co-authors), see if I can push through <the final details of a different proof I'm working on.>

Dedicate one day's deep work for finishing <a journal paper review>

Georgetown Teaching/Misc

Each day, outside of the deep work hours assigned above, make progress on the below non-deep tasks.

Once my new textbook arrives, I need to decide on my syllabus for <class I'm teaching this fall> and post online.

The following small tasks are time sensitive this week: (1) pick up new parking pass; (2) send back visa letter for <a researcher I know>; (3) respond to <a colleague's> recent questions.

Writing

Use the morning block <[note: I sometimes work for an hour at home in the morning to allow traffic to die down]> and commute to plan and gather the sources I need to start writing next week.

Over weekend, write a blog post where I <reminder of post topic>

This plan adopts a different format. Because this was a summer week with no major appointments, meetings, or other scheduled obligations to break up my days (so rare, yet so wonderful), I could base my schedule around some simple heuristics: three hours a day on deep work for research, and a list of small things to schedule each day into the time that remains.

I would never get away with this approach during the height of the school year, but for a lazy week in July, it worked perfectly.

The bigger message here, however, is that I always decide in advance what I am going to do with my week. These decisions look different at different times of year, but what matters is that when it comes to my schedule, I'm in charge.

Rule 15-Do At The End of Each Saturday and Sunday Do Weekly Review And Reflection of The Progress.

Step 3 Create Daily Planning

Rule 1-Define Deep Work and Shallow Work:

I. **Deep Work is ability to focus without distraction on a cognitively demanding task.** This creates new value, improve skills and Hard to Replicate.

II. **Shallow work: Non-cognitively demanding, logistical-style tasks, often performed while distracted and Not Create New Value or Improve Skill.** It is not Deep Work, but Shallow Work if the work is not Hard, Context Shift and or have Distraction.

Rule 2- Create Daily Plan Either At The Shutdown Previous Day or In the Morning. Be flexible with Your Daily Planning. Spend Between 30-90 Minutes, on what is upcoming for next Day or Today and decide how to tackle. When Planning For Daily, this planning must have intention.

Rule 3-Each Day- Build intentional Daily Plan Based on a review of:

I. Value Document.

II. My Weekly Plan.

III. My Project Tracker.

IV. My Value Plans.

V. My Task List.

VI. My Calendar.

VII. If it's a weekday, build a time block plan. If not, sketch a looser plan.

Rule 4-Organise The Task.

I. **When Do I add A task to My List vs Straight Into My Week Plan?**

II. **If the task or obligation pops up, and you writing down and capturing exactly what I need to do. At the End of the day you need to processing the task that needs to be done. There are two places that the task can go:**

   A. **On the Appropriate Task Board List. This is not time specific task list.**

   B. **Or Calendar. It goes on the calendar if this connected to specific day that task needs to be executed. Calendar is for time specific tasks.**

Rule 5- General Principle: Better To Plan Less and Actually Carry Out. Do not Schedule Too Much on Daily Basis. Have Realistic Schedule. Use Slow Productivity Approach To Setting Up Goals.

Rule 6-USE And Apply 80/20 Principle By Asking: Is this Task in the top 20% of my activities or in the bottom 80%? Identify Most Important Task.

I. **Once Identify Task In the Top 20% input that gives 80% of Output. Then, Put 100% effort into 20% inputs, to achieve best results. Remove Trivial Tasks.**

Rule 7- TimeBlock Planner.

A. **Step 1 Open 2 page Planner.**

B. **Step 2 On the Left Page Draw The Line in The Middle and Write the Following:**

   I. **On Left Side Of Page Write Tasks.**

      - **Practice Full Capture of Tasks. This Includes Processing Captured Tasks During Shutdowns.**
      - **Structure the information that you have captured, whether it is by categories or by role, etc. Your captured information needs an available structure. Availability in this case refers to the possibility to understand what is happening next. Organising your information will allow you to avoid cognitive overloads since you get a "gestalt" of what is going on in your life.**
      - **Review all Tasks and All information on a regular basis.**

   II. **On the Right Side of the Page Write Ideas.**

C. **Step 3. Left Page DRAW Two Horizontal Lines and Write Metric Tracker.**

   I. **In This, You Can Track, How Many Hours Do You spend In Deep Work without distraction.**

   II. **Any Disciplines I decided To Do On Daily Basis**

   III. **This can be also how many number of sales cals you made today**

   IV. **How Many Steps I made.**

   V. **TRACK WHAT you can use the phone for**

   VI. **How Many Minutes I exercised or How many sets of particular exercise I did.**

   VII. **Or Some other Metrics That I will follow.**

D. **Step 4. Draw Shutdown Box At The Top Of the Left Page. This is System, that helps to mind shift from work mode to non work mode.**

   I. **Part 1. Make sure that the personal metrics are recorded.**

   II. **Part 2 Go Through task, and Ensure that The Tasks are Fully Captured. Deciding what you want to do with it. You may need to add new task or update calendar.**

   III. **Part 3 ideas in the collection column, deciding what you want to do with it. You may need to add new task or update calendar.**

   IV. **Part 4 Briefly review any potential sources of unresolved work obligations, by reviewing your calendar and obligation tracking system.**

   V. **Part 5 Check weekly plan, and make updating as needed.**

   VI. **Part 6 Make The Shutdown Box Completed.**

E. Rule 5, Discipline of Execution.

I. Discipline 1. Draw Eisenhower Matrix with 4 Quadrants.

II. Discipline 2 Example of How Will I Write in Eisenhower Matrix of Any Quadrant.

- Example
  - **Quadrant 1-Deadline**
    - **i.** Part 1 Submit Assignment.
      - **a.** Task. Check Eisenhower Matrix, What Steps To Take.

II. Discipline 3 Draw and Fill Eisenhower Matrix. Use And Follow Every Question In Rule 7 Ask Myself All Those.

1. **Quadrant 1 Do It Right Now-**Task Important And Urgent. **Reactive.**
   - **Shallow Work, Meeting, Solitude, Boredom Appointment, Deadlines, Crises, Emergencies, Emails, Phones, Social Interaction, Auditing Time Spend, Meditation, High Quality Downtime, Ad Hoc Tasks.**
2. **Quadrant 2 Schedule It-**Task Important But Not Urgent. **PROACTIVE.**
   - **Spend Majority of Time In Quadrant 2.**
     - **Personal Life.**
       - **Values**
       - **Behavior.**
       - **Moral Ethics.**
     - **Professional Life.**
       - **Values**
       - **Behavior.**
       - **Moral Ethics.**
       - **Tasks**
       - **Goals.**
     - **Deep Work.**
     - **Learning and Studies.**
     - **Review, Journaling and Visualisation.**

3. **Quadrant 3 Delegate It**-Task Not Important But Urgent. **Distraction.**
    - Task not Important For you, But Urgent for Others. **Avoid This Quadrant As Much as Possible.**
4. **Quadrant 4 Delete It**-Task Not Important And Not Urgent. **Time Waste.**

E. Rule 6: List of Workday Activities:

- **Quadrant 1:Shallow Work, Meeting, Solitude, Boredom Appointment, Deadlines, Crises, Emergencies, Emails, Phones, Social Interaction, Auditing Time Spend, Meditation, High Quality Downtime, Ad Hoc Tasks.**
- **Quadrant 2 Schedule It-**Task Important But Not Urgent. **PROACTIVE. Spend Majority of Time In Quadrant 2.**
    - **Personal Life.**
        - **Values.**
        - **Behavior.**
        - **Moral Ethics.**
    - **Professional Life.**
        - **Values.**
        - **Behavior.**
        - **Moral Ethics.**
        - **Tasks.**
        - **Goals.**
    - **Deep Work.**
    - **Learning and Studies.**
    - **Review, Journaling and Visualisation.**

- **Quadrant 3:Task not Important For you, But Urgent for Others.**
- **Quadrant 4: Time Waster.**
- **Break, Intermittent Fasting, Breakfast, Lunch or Dinner.**

F. **Rule 7 Ask Myself All Those 30 Questions, If I have Done All Of Them. Once Done, I could Start My Day.**

I. **Am I intentional with The Time? Time Blocking Allows you think, what is the best way to make the day in front of me. Example: My day is packed in afternoon, then I have to get up very early to Make such task done, there is only 30 minute block between these two meeting, and why I am not wait until that block to follow up on XYZ, as this is pretty low energy task, but needs to be done. You being much more intentional.**

II. **Have I Divided on The Right Page of the Schedule and Reschedule into 6 Blocks. Have I draw A Block That Covers Lines Corresponding to these Hours.**

- **Early Morning 5am-8am.**
- **Morning 8am-12pm.**
- **Noon 12pm-14pm.**
- **Afternoon 14pm-18pm.**
- **Evening 18pm-22pm.**
- **Night 22pm-05am**

III. **USE And Apply 80/20 Principle In Every Area By Asking: Is this Task in the top 20% of my activities or in the bottom 80%? Identify Most Important Task, Based ON Weekly Planning.**

- **Once Identify Task In the Top 20% input that gives 80% Output. Then, Put 100% effort into 20% inputs, to achieve best results. Remove Trivial Tasks.**

IV. **Eat That Frog Means Tackle The Biggest, Hardest and Most Important Task First. Ask Yourself, what is the Biggest, Hardest and most Important Task For Today Based On The Weekly Planning?**

V. **Determine if A Task Qualifies As Deep Work By Asking Questions. If All the Answer is Yes to Most Questions, then it falls under category of Deep Work:**

- **Does this task require focused attention?**
- **Does this task require specialised training or knowledge?**
- **Does this task create new value in the world?**
- **Would this task be difficult to replicate?**

VI. **Deep Work: Where, When, How long and How will you work?**

VII. **Once Determined, if the task is Deep Work or Shallow Work or Any Task. Break Down The Deep Work Tasks, Shallow Work, or Any Other Tasks Into Smaller Manageable Tasks.**

VIII. **Decide in advance what is The Most Important Task Out of Deep Work That you'll work on during each deep work session Today. To Work Deeply you need to focus on one task and ignore everything else. When you decide what to concentrate on in advance, you can avoid multitasking.**

IX. **Determine, How Much Time Do I need To Finish Up This Deep Work, Shallow Work or Any other Task. Block Off The Time For Tasks, and Block Off Large Chunk of Time Every Day For Deep Work.**

X. **Give Yourself A time Limit for Each Task and Have Defined Clear Metrics of Success. Next to each item on the list, write about how long it'll take you to accomplish each task. Be realistic about this estimate. Then, try to complete each task within the confines of each time limit. Example you might set a goal to write 500 words every 30 minutes—this way, your task is straightforward and you naturally get two simple progress checks per hour. Time blocking helps you to learn how really long does it take for the things to be done.**

XI. **Concentrate and Work on the Task what is written in the blocked off period in the Time Block, until its done and avoid any other Tasks. Then Move on the other Task. Do One thing at the time.**

XII. Decide What Type of Note Taking Method Will I Use, When Do Deep Work:

A. **Analytical Learners: Outline/ List. Good Works well for recording terms, definitions, facts and sequences**

B. **Sentence Method: The goal is to jot down your thoughts as quickly as possible. Works well in meetings or lectures that lack organization. Use when information is being presented very quickly.**

C. **SQ3R (Survey, Question, Read, Recite, Review). Use for dense readings (like business books, text books, whitepapers, etc.). You start the process by skimming the material for bolded text, images, diagrams and summaries in order to produce a list of headlines or main topics.**

D. **Mapping. Mapping is a nonlinear system of note-taking that resembles a tree and root structure. Ideas stem from one major concept and are connected by lines (or "branches"). As a note-taking system, mapping works particularly well for visual learners, but it can also be a great tool for analytical-thinkers who have trouble brainstorming because it allows you to make connections you'd otherwise miss with a linear format. Works well for planning essays, recording meetings. Use for big-picture brainstorming sessions.**

E. **Smart Wisdom. It's a tool optimised for active listening in lecture situations. Instead of taking notes in full sentences, you record only keywords and place them in a chain that maps the thought process.**

F. **Diagram And Processes. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

G. Cornell Note Taking

- **Name.**
- **Date.**
- **Class and Period.**
- **Topic.**
- **Essential Question at the Top of Page.**
- **Questions and Main Ideas on the Left Page of the Blank Page.**
- **Notes On the Right Page of the Blank Page.**
- **Summary at the bottom of the page.**

H. Use Smart Notes.

- **What is big Idea.**
- **Question.**
- **Evidence.**
- **Conclusion.**

I. Charting. Charting is a great note-taking strategies when you need to compare and contrast ideas. The most widely used charting method is the Pro/Con list.

J. CERC.

- **Claim**
- **Evidence**
- **Reasoning**
- **Conclusion**

XIII. Do I need to Use Computer or Phone Today For Any Task?

XIV. Ask Myself If I need to Use Rules of Reading For Today. If Yes, Then Write In Eisenhower Matrix, The Page OF Rules of Reading That I will Use. Then Listen, Follow and Apply Rules of Reading To The Task.

XV. Ask Myself If I need to Use Feynman Technique For Today's Deep Work Or Any Other Task. If Yes, Then Write In Eisenhower Matrix, The Page OF Rules of Reading That I will Use. Then Listen, Follow and Apply Feynman Technique To Any Deep Work or Task.

XVI. Ask Myself If I Need To Use Newspaper, Internet, Youtube, WhatApp and Email For Today. If Yes, then Check If those Reasons are based On Rules Of Reading Pages 16-22.

XVII. Group Quadrant 1 Tasks, Based On The Similarities.

XVIII. Based On Eisenhower Matrix, What is Deep Work and Shallow Work Ratio?

XIX. Schedule Time for Solitude Time. No Phone, Email.

XX. Schedule Time for Review, Journaling and Visualisation.

XXI.Schedule and Set Time For Distractions, Emails, Internet Phone. Limit the time you spend on email. If your work requires you to regularly check your email, schedule 1 to 2 hours each day for checking your email; don't look at it during other times.

A. **If you can, it’s also a good idea to turn off your message alerts and Notification.**
B. **Organise the inbox.**

XXII.Set For High Quality Downtime and Recharge.

A. **Walk.**
B. **Run.**
C. **Read.**
D. **Get New Hobby.**

XXIII.Set Time for Social Interaction At Work: Do not involve into office politics, but come to do performance. If there is office politics, then you go perform instead involve into office politics.

A. **Create signals for when you’re approachable and not.**

XXIV.Set Time for Social Interaction With Friends and Other People Outside of Work.

XXV.Set Time For Appointments.

XXVI.Set Time For Meeting. Audit your meetings.

XXVII.Set Time For Auditing Time Spent. Audit how you're spending your work time. Before you can trim away shallow work to make room for deeper pursuits, you have to understand the type of work you do on a day-to-day basis. To do this, list out every activity or task you engage in—then quantify the depth of every activity so you know how much time you're spending on deep work vs. shallow work. Reflect on and tweak your schedule: Newport suggests reviewing the accuracy of your time blocks at the end of each day. This will help you set more accurate goals and expectations in the future.

XXVIII.Set Time For Boredom and Let Boredom Happen. No Gadgets, Social Media or high Stimulus.

XXIX.Set Time For Meditation.

XXX.Did I Ask The Question In The Morning and Evening? This is Based On Values:

- **What Good Shall I Do This Day?**
- **What Good Have I Done Today?**

B. **Rule 8 On the Top Right Page. Write Date.**

C. **Rule 9 On Right Top Page Of Planner, Based on Eisenhower Matrix and Deep Work and Shallow Work Ratio, Decide Deep Work Philosophy, and Check What is Going to Be Done In Those Blocks On Pages**

   I. **Shallow Work Philosophy.**

   II. **VAIDAS Daily Routine Philosophy.**

   III. **Benjamin Franklin Daily Routine Philosophy.**

   IV. **Journalistic Philosophy.** Journalistic strategy involves do deep work whenever it fits into your schedule. **The Journalistic Philosophy of Deep Work Scheduling is an option for people who are constantly on the move with little to no regularity to their days. This method demands vigilance with your time and the keen ability to notice natural ebbs and flows in your day where you may be able to fit in 30 minutes or an hour or two of deep work. Unfortunately, this method is not for beginners and is likely to fail for people who are not experienced in deep work.**

   V. **Rhythmic Philosophy.** Involves time blocking certain hours, about 1 to 4 hours each day, to complete your deep work tasks. **The Rhythmic Philosophy of Deep Work Scheduling is ideal for individuals with a fairly static schedule. If you can anticipate what most of your days will look like, it's feasible to block off several hours every day for deep work, thereby getting into a daily "rhythm" and leaving the rest of your hours for shallow work.**

   VI. **Bimodal Philosophy.** Involves splitting your schedule based on Deep and Shallow Work. Spend a Day or Week on Deep Work and once is completed, Then Focus on only shallow work. **The Bimodal Philosophy of Deep Work Scheduling allows for a high amount of deep work while enabling you to maintain other activities in your life that you find valuable. Successfully adopting this philosophy requires the flexibility to arrange your year, months, or weeks as you see fit into larger chunks of deep work.**

VII. **Monastic Philosophy.** Involves cutting out all shallow activities to focus on deep work for weeks or months. Monastic Philosophy I**s the most dedicated form of deep work and involves spending all of your working hours on a singular high-level focus. While this philosophy has the highest potential for reward and the lowest level of context switching, it's unrealistic for most people who are required to perform various kinds of work in their role. It also blocks the potential for new opportunities, as your default response to commitments that arise is "no."**

D. **Rule 10 On Right Page Of Planner, Draw 2 Vertical Line on Left Side and Right Side, Making 3 Columns..**

I. **The Goal of Time Blocking is not to stick with original schedule no matter what. Instead to try to always have an intentional plan for what to do with your time. If the circumstances upend your schedule, this isn't failure, its an expected part of applying this strategy.**

II. **Use 2 Lines To Represent 1 Hour And Write vertically Hours From 6am to 21pm and Divide The Hours of Workday Into 6 Blocks and Draw A Block That Covers Lines Corresponding to these Hours :**

- **Early Morning 5am-8am.**
- **Morning 8am-12pm.**
- **Noon 12pm-14pm.**
- **Afternoon 14pm-18pm.**
- **Evening 18pm-22pm.**
- **Night 22pm-05am**

III. **Write and Assign Workday Activities to These Blocks Based On Eisenhower Matrix**

- **Example, How I will Write: Q2- Family Part 2, and Then** Check Eisenhower Matrix, What Steps To Take.
- If You need More Room for Block's Description. Like You want to list of multiple tasks you plan accomplish during short block. Put a number in the block, and then use same number to label a list of extra information in the upper right corner of the time block, where it's unlikely to get in the way of future schedule fixes.
- Use Calendar To Add Scheduled Appointments and Meetings on The TimeBlock.

E. **Rule 11 If new obligation comes up, Then on right page reschedule the day.**

I. **To Fix The Time Block, First Cross Out The Time Blocks that Remain In My Current Schedule. Then, In The Next Column To The Right Of Your Current Schedule, Create New Schedule For The Remaining Hours, And Turn Your Attention To Executing New Plan.**

II. **If schedule disrupted, Either create a revised schedule, or Give longer Time than required to handle the tasks.**

F. **Rule 12- Finish up Job At 17-17:30 and Do not Bring Work To Home.**

G. **Rule 13 Write Distracting Ideas in The Ideas Part of Schedule, While I am Doing Deep Work.**

H. **Rule 14- Have Deep Work Timer. If I get up for Bathroom or Coffee, then the Deep Work Timer is stoped, Once Back, Turn On Timer. Deep Work Hours Only counting, when I actually Do Deep Work.**

I. **Rule 15 Be There and Do Grinding of Deep Work, even if I Don't feel it.**

J. **Rule 15 Use Slow Productivity When Doing Any Task or Deep Work**

    A. **Step 1- Slow and Steady and Time Line Expansion. Working Quality of Work again and again in the right setting giving the work the respect and the support it needs to be good. You need to look at this way, did I produced at the end of this year that I am proud of. Best serve is slow, steady and Quality.**

    B. **Step 2-Do not juggle between task, but do one task at the time at normal and natural pace.**

    C. **Step 3-Do fewer things daily. You are not a computer processor, you are human.**

    D. **Step 4- Work at a natural pace. Seasonality at various level. Instead of worrying about how much you can do in a day, worry how much you can do in months & years? This will shift your perspective.**

    E. **Step 6- Be obsessed with quality. Do less, do better. Skilled important activities gives you motivation & make you feel more fulfilling.**

    F. **Step 7- Be minimalist in your schedule. Say No often on taking more work.**

K. **Rule 16-Do At The End of Each Day Review And Reflection of The Progress.**

Shallow Work Philosophy.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Shallow Work, Deadlines, Crises, Emergencies.**

12pm-14pm: NOON.

- **Shallow Work or Nap.**
- **Break, Lunch and Intermittent Fasting.**
- **Financial Security: Read or Look Over Account and Dice.**
- **Physical**

14pm-18pm: Afternoon

- **Shallow Work, Deadlines, Crises, Emergencies**

18pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Family, Or Social or Health or Physical or Mental or Health or Leisure or Communication or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

VAIDAS Daily Routine Philosophy.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

12pm-14pm: NOON.

- **Shallow Work or Nap.**
- **Break, Lunch and Intermittent Fasting.**
- **Read or Look Over My Financial Security, Account and Dice.**
- **Physical**

14pm-18pm: Afternoon

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

17:30pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Physical or Mental or Health or Family or Parenting or Reading or Music or Diversion or Conversation or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Benjamin Franklin Daily Routine Philosophy.

5am-8am: Early Morning.

- **Rise, Wash.**
- **Address Powerful Goodness.**
- **Contrive Day's Business and Take Resolution of the Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study.**
- **Breakfast.**

8am-12pm: Morning.

- **Deep Work.**

12pm-14pm: NOON.

- **Break and Lunch.**
- **Read or Look Over My Finance, Account and Dice.**

14pm-18pm: Afternoon

- **Deep Work.**

18pm-22pm: Evening

- **Put Things In Their Place.**
- **Supper.**
- **Music or Diversion or Conversation.**
- **Examination of the Day.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Journalistic Philosophy Daily Routine.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Family and Social**
- **Shallow Work, Deadlines, Crises, Emergencies.**

12pm-14pm: NOON.

- **Break and Lunch.**
- **Read or Look Over My Financial Security, Account and Dice.**

14pm-18pm: Afternoon

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

18pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Family, Or Social or Health or Physical or Mental or Health or Leisure or Communication or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Rhythmic Philosophy Daily Routine.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

12pm-14pm: NOON.

- **Shallow Work or Nap.**
- **Break, Lunch and Intermittent Fasting.**
- **Read or Look Over My Financial Security, Account and Dice.**
- **Physical**

14pm-18pm: Afternoon

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

18pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Family, Or Social or Health or Physical or Mental or Health or Leisure or Communication or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Bimodal Philosophy Daily Routine.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

12pm-14pm: NOON.

- **Shallow Work or Nap.**
- **Break, Lunch and Intermittent Fasting.**
- **Read or Look Over My Financial Security, Account and Dice.**
- **Physical**

14pm-18pm: Afternoon

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

18pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Family, Or Social or Health or Physical or Mental or Health or Leisure or Communication or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Monastic Philosophy Daily Routine.

5am-8am: Early Morning.

- **Rise, Go Outside Get Light, Cold Wash.**
- **Deep Work:Spiritual or Personal Growth, Learning and What Type of Person I want to Become.**
- **Journaling And Visualisation.**
- **Contrive Day's Business and Take Resolution of the Day-Schedule The Day.**
    I. **The Question: What Good Shall I do This Day?**
- **Prosecute the Present Study Or Physical.**
- **Travel.**
- **Breakfast.**

8am-12pm: Morning.

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

12pm-14pm: NOON.

- **Shallow Work or Nap.**
- **Break, Lunch and Intermittent Fasting.**
- **Read or Look Over My Financial Security, Account and Dice.**
- **Physical**

14pm-18pm: Afternoon

- **Deep Work:**
    A. **Career, Business and Educational Aspiration.**
    B. **Spiritual.**
    C. **Personal Growth, Learning and What Type of Person I want to Become.**

18pm-22pm: Evening

- **Travel.**
- **Shallow Work and Put Things In Place.**
- **Supper.**
- **Family, Or Social or Health or Physical or Mental or Health or Leisure or Communication or Environment.**
- **Examination of the Day, Journaling and Visualisation.**
    I. **The Question: What Good Have I done Today?**
- **Prayer.**

22pm-5am-NIGHT.

- **Pre-Sleep Ritual and Sleep.**

Step 4 Periodic Review

Rule 1- After establishing your Deep Life Stack, it's important to review and possibly iterate through the layers periodically. Use a specific time, like your birthday, as an anchor for this review. Check if your discipline, values, Professional code of Conduct, Personal Code of Conduct, and plans are still in alignment with your goals and make the necessary adjustments. Do The Deep Life Stack Once A year go through the whole, however on Quarterly, Weekly, Daily Basis review: Values, Calm and Plan

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Stage 2: What Projects Do I Commit

Rule 1: Use Productivity Funnel To Decide What Project Do I commit.

I. **Step 1-Top- Selection. Potential Activities comes. In selection part you trying to figure it out, the activities coming into funnel, which actually I am going to bring it to my system, and how to execute at some point. Lots of activities going to be blocked at this stage.**

II. **Step 2- Middle-Organisation. The activities that I select, needs to be organised. Where they kept track of, where is information associated with the activities kept track of. This is where you use capture system. Quarterly, weekly, Daily Planning.**

- **Goal 1-There are two goals for this funnel level: to avoid forgetting what you're supposed to do. and to make smart decisions about what to work on next**
- **Goal 2-Make smart decisions about what to work on next.**

III. **Step 3-Bottom- Execution. Now I know what I am supposed to be doing, now I need to know how will I do it. This is where deep work meets shallow work, Scheduling, quarterly, weekly, daily and execute the activities.**

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Stage 3: How To Fix My Schedule

I. **Do One Project At The Time**

II. **Do One Task At The Time and At The Natural Pace. One should take one's time with everything (do everything at one's own pace).**

III. **Do fewer things daily. You are not a computer processor, you are human.**

IV. **Work at a natural pace. Seasonality at various level. Instead of worrying about how much you can do in a day, worry how much you can do in months & years? This will shift your perspective.**

V. **Be obsessed with quality. Do less, do better. Skilled important activities gives you motivation & make you feel more fulfilling.**

VI. **Be minimalist in your schedule. Say No often on taking more work.**

VII. **Cutting back on the number of projects you're working on.**

VIII. **Cutting inefficient habits from your daily schedule.**

IX. **Possibly annoying people by sticking to such a fixed work schedule.**

X. **Serialize projects by working on one major project at a time and moving to another when finished to maximize efficiency**

XI. **Be clear about when to expect results by making an honest evaluation of when you can get something done by**

XII. **Turn down projects if you're focusing on too many things and can't get a potential project done in a reasonable time**

XIII. **Drop projects if they end up taking up too much of your time**

XIV. **Be unavailable at certain times of the day to focus on meaningful work**

XV. **Turn regularly occurring work into a habit that's done consistently at a fixed date and time**

XVI. **Start early on important projects (and, Putting End To procrastination.**

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Stage 4:Prepare The Environment, Tools and Eliminate Distractions

Rule 1-Set Up Work and Study Space: Have A dedicated Desk or Study Area Purely for Deep Work, means you always have somewhere to Go.

I. **Step 1-Consider the environment you create. Remove anything that can distract you from your work and isn't relevant to the task.**

II. **Step 2-Clean off your desk to include only the things you need to work on, leaving just a few photos or mementos to help you relax a bit.**

III. **Step 3- Limit your desktop to only the things that are required for what you're immediately working on so that there are no extraneous materials to distract you.**

Rule 2- Prepare The Tool Needed For Deep Work. Prepare Required Documents, Articles, Books or Any Resources For Deep Work and Rules for Deep Work.

I. **Step 1- Download or Print all Reading, References or Listening resources, Kindle and Text To Speech.**

II. **Step 2- Decide in advance what you'll work on during each deep work session. To work deeply you need to focus on one task and ignore everything else.**

III. **Step 3- Determine rules to guide your concentration, like whether you'll use the internet, how many words you'll write every 20 minutes, or where you'll put your phone.**

IV. **Step 4- Have Notebook, Pen, Ruler, Pencils.**

V. **Step 5- Headphone.**

VI. **Step 6- Laptop or Phone. Phone and Laptop Can be Used just for Audiobook**

VII. **Step 7- Tea or Water Bottle**

VIII. **Step 8- Ask Myself If I am Doing Deep Work Alone or Collaboration. Focusing on "serious work" typically entails working alone for hours.**

Rule 3-Eliminate Distraction:

I. **Step 1- To learn hard things quickly, you must focus intensely without distraction.**

II. **Step 2-Identify the biggest Distractions. Eliminate each one of the distraction.**

III. **Step 3- Find A Place Alone.**

IV. **Step 4- Eliminate Mobile Distraction.**
    A. **Uninstalling The Apps that Might Trigger.**
    B. **Change Notification Settings for apps and phone.**
    C. **Delete Social Media apps**
    D. **Quit Social Media All Together.**
    E. **No WI Fi.**
    F. **Turn off phone or mute**
    G. **Turn off notification.**

V. **Step 5- Schedule Time For Distractions, and Stay only on those schedule time to be Distracted,**

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Stage 5:Hack Meetings, Phones and Emails and Other Technologies.

Rule 1- Hack Meetings:

I. **Step 1- Make it Harder To Call a meeting. Require An Agenda and A Brief Document.**
II. **Step 2-The Meeting Margin Method Assume you have to schedule a meeting that lasts X minutes. Instead of blocking off X minutes on your calendar, block off (1.5)*X minutes.**
III. **Step 3-To process the meeting: clarify any new obligations that were discussed and make sure they're in your system. Perhaps execute some of the smaller tasks right away. The goal here is to close all open loops related to the meeting so that it releases its hold on your mental energy moving forward in the day.**
IV. **Step 4- To catch up on anything missed while in the meeting: check your inboxes to handle anything urgent (if you're in the type of job were such urgent communication is common and cannot be ignored). The goal here is to eliminate the need for you to rudely and uncomfortably split your attention during the meeting itself by constantly checking your inbox. If you know you have time right after to check in, you can confidently concentrate while in the meeting.**
V. **Step 6-To make progress on real work: if the margin is large enough, make progress on things you know need to get done. The goal here is to stave off that feeling that everyone *but you* has control over your time and attention.**
VI. **Step 7- If You Are in the Meeting be Fully Present.**

Rule 2- Hack Phones:

I. **Step 1- Use Phone For Text.**
II. **Step 2- Use Phone For Calls.**
III. **Step 3- Use Phone for Photos.**
IV. **Step 4- Use Phone For Maps.**
V. **Step 5- Use Phone For AudioBooks.**
VI. **Strp 6- Use Phone For Recording Notes, Ideas, Journaling and Review.**
VII. **Step 7- Uninstall Distracting Apps, Like Social media.**
VIII. **Step 8- Set a Schedule For Online Activities at the Computer.**
IX. **Step 9- Use Digital Minimalism for The Phones and any other Technology.**
X. **Step 10- When You are Doing Deep Work or Having Family Time, Leave the Phone In the Other Room and Do Not Touch.**
XI. **Step 11- Schedule Time For Phones, and Stay only on those schedule time to use Phone.**
XII. **Step 12- When you at home do not carry phone in pocket, but put in one of the rooms. If someone call, text go to that room. You will be less distracted.**

Rule 3- Hack Emails:

I. **Step 1- Change the Email Set up**
II. **Step 2- Never Schedule A Call or meeting Using Email. Use Microsoft Outlook to set up a meeting in the calendar.**
III. **Step 3-Immediately move obligations out of your inbox and into role-specific repositories.**
IV. **Step 4- Make Senders Do More Work When They Email You.**
    A. **Make senders work for your email addresses; don't list it publicly or have it on your website.**
    B. **Ask senders to filter themselves by having different emails or separate contact forms for different queries.**

V. **Step 5-Do More When You Send or Respond to Emails**
    A. **Reduce the back-and-forth of emails with a "process-centric approach to email." By sending more thorough and complete correspondence, you'll close the loop on a conversation more quickly. Reduce the back-and-forth of emails with a "process-centric approach to email." By sending more thorough and complete correspondence, you'll close the loop on a conversation more quickly. For example, a bad reply would be, "Yes, let's meet for lunch. When works for you?" A better reply is, "Here are times over the next week when I'm available. If any of these work for you, let me know, and please send a calendar invite. If none of these work, please send over a few times that do."**
    B. **Example**
        - **If the person wants to meet with you. Answer I would love to meet over hangout. Advise what hours and days are you available. "I'm available, Mon, Wed, Fri from 12pm-3 pm. If you are free at any of those times, send a calendar invite my way and we will talk then**
        - **If does not work for you, give me a quick call at and we can work out a time over the phone**

VI. **Step 6-Don't Respond.**

A. **Not every email that lands in your inbox requires a response. For some, the default line of thinking is that "it's the sender's responsibility to convince the receiver that a reply is worthwhile". However, this is a controversial belief. Some suggest that not responding to emails is rude, and others recommend never responding to your emails at all.**

B. **These three rules may help you find a middle ground that saves your sanity while still remaining open to opportunities that may arise. Newport recommends that you don't respond to a message with these qualities:**

- **It's ambiguous or otherwise makes it hard for you to generate a reasonable response.**
- **It's not a question or proposal that interests you.**
- **Nothing really good would happen if you did respond, and nothing really bad would happen if you didn't.**

VII. **Step 7-Hold office hours. Setup a recurring Zoom meeting for set times every week where you guarantee to be present. As much as possible, when people send you an ambiguous request or initiate a conversation that will require a lot of back and forth, point them toward your office hours schedule and tell them to stop by next time they can to discuss. It's a simple idea, but it can reduce the number of attention-snagging back-and-forth electronic messages in your professional life by an order of magnitude.**

VIII. **Step 8-Do More When You Send or Respond to Emails. Let your team know when you're available. Share your communication preferences with your team and let them know when you typically answer messages.**

IX. **Step 9- Schedule Time For Emails, and Stay only on those schedule time to Check The Emails.**

Rule 4- Hack Whatapp and Other Technologies

I. **Step 1- Schedule Time For Whatapp and Other Technologies, and Stay only on those schedule time to Check Whatapp and Use Other Technologies.**

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply TO The Task, Deep Work, Deep Studies, Learning and Studies.

Stage 6: Understand Importance Of Slow Productivity And Apply Slow Productivity In My Life.

Rule 1- Slow Productivity is shift the amount of meaningful things done in the next years. Try to do lot less, but the things I am doing on larger time scale, you get sense overload. Example: you want to produce good book in the next 2 years, this is different type of initiative than trying to do as many writerly promotion things as many as possible.

Rule 2-Slow and Steady and Time Line Expansion. Working Quality of Work again and again in the right setting giving the work the respect and the support it needs to be good. You need to look at this way, did I produced at the end of this year that I am proud of. Best serve is slow, steady and Quality.

Rule 3- Do not juggle between task, but do one task at the time at normal and natural pace.

Rule 4- Do fewer things daily. But You Should Do Most Important Things. You are not a computer processor, you are human.

Rule 5- Work at a natural pace. Seasonality at various level. Instead of worrying about how much you can do in a day, worry how much you can do in months & years? This will shift your perspective.

Rule 6- Be obsessed with quality. Do less, do better. Skilled important activities gives you motivation & make you feel more fulfilling.

Rule 7- Be minimalist in your schedule. Say No often on taking more work.

Rule 8- Work Smart And Hard.

Rule 9-Constrain- We need to be careful to what we saying YES and what we saying No To. Have Rules, how I am going to Decide what I am letting on my plate and what is not.

Rule 10-General Maxim: More Haste, less speed. One should take one's time with everything (do everything at one's own pace). If a decision is to be announces in a letter, better to give preliminary answer (to be polite). Decide and acting are two different things. Slow productivity commitment- do not procrastinate and put things off, but do it slowly consistently and steady.

Rule 11-Mastering one topic at the time and no more than that.

Rule 12- Regardless of What you Get paid per Hour, Give your best. Effort + Attitude Matters. Anywhere you work, you need to work your tail off. No matter how much you paid me, I will work my tail off. This creates the reputation about you that you putting your best no matter how much you getting paid. This shows your great attitude, this will bring more opportunities in your life. Pay Attention to Your effort pay attention to your attitude.

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply TO The Task, Deep Work, Deep Studies, Learning and Studies.

Stage 7: How To Attack Large Project.

Rule 1: Work On One Project At The Time, And No More Than That. This is the Most Important Rule.

Rule 2: Reduce from a project to a reasonable task.

I. **Step 1 Extract Some Reasonable Task That Will Simply Move You Closer to The Full Project Goal. Reasonable in this instance, means that you have what you need to get started, and the whole task shouldn't take more than 1 to 4 weeks to complete.**

Rule 3: Construct a habit-based plan.

I. **Step 1 Figure out when and where you're going to work on your task and what you are going to accomplish. Try to find a place and time you can hit consistently – something you can transform into a habit before your excitement for the project wanes.**

Rule 4: Complete and repeat.

I. **Step 1 At this point, it's time to repeat. You are now closer to completing your project than before. Survey your options and come up with a new reasonable task that will bring you even closer to your goal. Once your new task has been selected, come up with a new habit-based plan, and get back to work. Your path toward project completion will proceed along these lines. One small task, efficiently executed, at a time, until, eventually, you get within striking distance of your goal, and make that final sprint.**

Rule 5: Consistency

I. **Step 1 The big "doers" in life tend to be those who are consistently working, piece by piece, On one Project At The Time. They get it done. Not in a week of caffeine-fueled frenzy, but in a half-year of small, frequent steps forward.**

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply TO The Task, Deep Work, Deep Studies, Learning and Studies.

Stage 8:Understand The Reward Is Waiting For Me For Doing Deep Work.

Rule 1: Consider What Reward Can I get for Finish Up Project or Deep Work.

Rule 2: Reward once You have to Finish Up The Work Or Project.

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply TO The Task, Deep Work, Deep Studies, Learning and Studies.

Stage 9: Preparation Of The Task.

Rule 1-Preparation: Decide in advance what you'll work on during each deep work session. To work deeply you need to focus on one task and ignore everything else. When you decide what to concentrate on in advance, you can avoid multitasking.

I. **Step 1-Think about the tasks that you need to complete and note what time you plan to complete them. Newport recommends breaking down your tasks into half-hour blocks, making sure to schedule buffer blocks to handle emergencies or tasks that run over their allotted time.**

Rule 2-Give Yourself A time Limit for Each Task and Have Defined Clear Metrics of Success. For example, Newport suggests leading metrics like the number of pages you've written or the number of new ideas you've generated. Next to each item on the list, write about how long it'll take you to accomplish each task. Be realistic about this estimate. Then, try to complete each task within the confines of each time limit. Example you might set a goal to write 500 words every 30 minutes—this way, your task is straightforward and you naturally get two simple progress checks per hour.

Rule 3- To learn hard things quickly, you must focus intensely without distraction."To produce at your peak level you need to work for extended periods with full concentration on a single task free from distraction."In order to produce the absolute best stuff you're capable of, you need to commit to deep work.

Rule 4- Doing Hard Things:

I. **Step 1-Make better Goals: Goals shouldn't be way too long term. Instead make Goals that you can track, control & those which give you a clear course of action for tomorrow.**
II. **Step 2- Learn how you work: Learn how you get yourself to do that work. Also associate it with Rituals(schedule), environment.**
III. **Step 3- Break it down: Break Big goals into manageable ones by making a rough Roadmap.**

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Stage 10:Remind and Understand Law Of Productivity For Deep Work.

Rule 1- Understand Law of Productivity for Deep Work and How Do I have To Approach to Deep Work, Studies, Learning, Thinking and Writing on Daily basis: High Quality Work Produced = (Time Spent) x (Intensity of Focus).

I. **Step 1-Do Not Seek Instant Gratification or enjoyment of Deep Work. But Apply Compound Effect, as you taking small steps consistently, which overtime leads to radical difference in your Deep Work and Focus.**

II. **Step 2- Deep Work and Focus Make it Habit. As It takes time Deep Work and Focus to become habit. The Habits become Routine, which is something you do every day without fail.**

III. **Step 3- Concentrate on What Is Important and One Task at the time. Never Multitask. Dedicate your full attention to the task. No Multitasking is allowed.**

IV. **Step 4- Consistency is the most important habit.**

V. **Step 5-DON'T WAIT FOR MOODS- show up, whether you feel inspired or not. Do Deep Work and Be There and Do Grinding of Deep Work, even if I Don't feel it On daily Basis.**
    A. **Remind Yourself that I choose The difficult thing to do for Good reasons. You need to feel like you choose the difficult Thing To Do, as you are autonomous author, as what it is you study, or work. The Work is going to be hard, but you understand that this would lead to greater things and opportunities**

VI. **Step 6-Remind yourself of what you're working towards. Having a goal in mind will give you motivation to finish your work, and you'll be more successful at staying focused.**

VII. **Step 7- Say NO-We need to learn the slow 'yes' and the quick 'no.' Simply being aware of what is being sold allows us to be more deliberate in deciding whether we want to buy it."**

VIII. **Step 8-Don't fall for Work Smart: Do not fall for the work smart only concept. You need to work very hard.**

IX. **Step 9- Practice: Practice if you are playing in the game, so when the moment comes in the game, its not new to me. That's the reason why you practice, thats the effort, so when you get to that moment, you do not have to think, instinctively things happen.**

X. **Step 10-Preparation: Do Proper Planning A Month, Week, Few days and night before which helps to prevent poor performance. The most prepared wins.**

XI. **Step 11-Do More: Stay back and do more work, and put effort to achieve the results I want. If the person makes 100 calls a day, you need to do 200 calls a day. If the person sells 20 products, you sell 40 products. If somebody practices 3 hours, then you do 5 hours. Do A little bit more.**

XII. **Step 12-Make One Move at A Time:You have to put one foot in front of the other. Focus on the day task. You have to have a plan in place, how you going to improve for each day to get better and stick it to the plan and trust the plan, that this brings to the end result.**

XIII. **Step 13-The market rewards people who outwork and out improve. Outwork Everyone: Try to prove that I was better then anybody else in the craft. Wake Up Early and Go To Bed Early. Get the competitive advantage by Waking up early and do the work.**

XIV. **Step 14- Regardless of What you Get paid per Hour, Give your best. Effort + Attitude Matters. Anywhere you work, you need to work your tail off. No matter how much you paid me, I will work my tail off. This creates the reputation about you that you putting your best no matter how much you getting paid. This shows your great attitude, this will bring more opportunities in your life. Pay Attention to Your effort pay attention to your attitude.**

XV. **Step 15- Rationality. Taking an objective view of problems is valuable when you're dealing with difficult people, or defusing situations where people are angry. Instead of being drawn into a shouting match, a Stoic will seek a rational way to resolve the problem.**

XVI. **Step 16-Calmness. Staying cool and collected is seen as a characteristic of Stoics. By ignoring things they can't control, Stoics are able to focus on the things they can affect. This helps to relieve the stress that's associated with working under pressure.**

XVII. **Step 17-Strength. Stoics are often able to demonstrate a strong, resilient attitude to work. Thinking like a Stoic won't make you immune to the demands of a heavy workload or a hectic working environment, but it will help you to recognize the stressors, and reduce their impact.**

XVIII. **Step 18-Flexibility. By seeking solutions to problems, and continually reflecting on their experiences, Stoics benefit from being able to work flexibly. In turn, this helps them to respond to change, quickly and positively.**

XIX. **Step 19-Morality. Modern versions of Stoicism also emphasize the moral elements of the philosophy. Sticking up for what's right, and staying true to your values, are key steps toward achieving ethical leadership.**

XX. **Step 20-Honesty. The self-scrutiny of Stoic meditation can help you to see what genuinely motivates you – and to communicate that motivation to others. In workplaces with a culture of intrinsic motivation, that can be a particularly valuable skill.**

XXI. **Step 21-Understanding. Bringing reason to bear on your own behavior and motivations can also make it easier to understand other people's actions and emotions. This can help you to empathize with them, and to build better relationships as a result.**

XXII.Step 22- Be tolerant with others and strict with yourself." – Marcus Aurelius. It seems like a generic saying you'd see on a cheap mug, but to the Stoics, it's a way of life: you can only control what you can control, and don't sweat what you can't prevent. And while experiencing pleasure and pain is a part of life, Stoics say these moods shouldn't dominate your existence. While there will be moments of happiness and moments of sadness, those shouldn't be the moments you're living for. The only thing you can control, the Stoics say, is yourself, meaning how you react to the situation around you.

XXIII.Step 23- "Waste no more time arguing what a good man should be. Be one." – Marcus Aurelius. Another meeting filled with talking about talking, another team huddle where you feel like you're thinking about thinking – are you really doing your work, or just working around your work? Stoics would hate modern business culture that demands the use of jargon, unnecessarily complicated measures for accomplishing tasks, and dozens of meetings where nothing gets accomplished. And if you're also tired of this old dynamic, refresh things yourself by streamlining your own processes and focusing on what actually matters in your job. What are your values and goals? What do you hope to tangibly achieve this week, this month, or this year? Set an example for your team and cut the fat to start working smart rather than working hard.

XXIV.Step 24-"Approach each task as if it is your last, giving up every distraction, emotional subversion of reason, and all drama, vanity, and complaint over your fair share." – Marcus Aurelius. Stoic advice for completing tasks is to focus on one thing at a time until it's done, which is definitely some advice that many could learn from in the technology era. While multitasking might seem like it makes things go faster, it really doesn't, and it just crowds your mind with a thousand different thoughts. By "drama," "vanity," and "complaint," Aurelius generally means that you shouldn't dwell on how hard it is to focus. Just try it, and if you fail, that's totally fine – the next quote has advice for that too.

I Will Read or Listen Like AudioBook On Phone, On Daily Basis And Apply TO The Task, Deep Work, Deep Studies, Learning and Studies.

Stage 11: Pre Deep Work Routine

1. **Rule 1- Set Up Pre Study Routine: Have you ever watched an athlete or sportsperson prepare for an event? They tend to have a set routine. Stretch in a certain way and a certain order, put their socks on at a certain moment, say a small prayer, talk to themselves with their eyes closed.**

2. **Rule 2-Do The Focus Training on Daily Basis. Train Your Focus Before Doing Deep Work, Do The Training On Daily Basis In The Morning:**
    I. **Step 1-Training for Focus: Put Away Phone for 2-10 minutes. Sit Down and Pick a point on the object or wall, ideally an object should be the same distance placed to which you going to that work and stare at it, you are allowed to blink, and just try and relax, while maintaining visual focus for 2-5 minutes on the Object. As Your mind Starts to Drift, every once in a while, the mind understands that there is something you need to do, and you do not want to do it, or you can't focus, you will find is it's incredibly boring and agitating, like most things you need to focus on, and having hard time focusing on. What you will find is that it carries over to a really terrific ability to Read, Study, Listen and Deep Work. And You start to notice those internal signals. There is something you need to do, and you do not want to do it, or you can't Focus. Chances are You just have not really taught your brain, how to focus. So Start with your visual focus, and then let your mental focus follow that. After doing this Focus Training for 2 to 5 Minutes, then move into the work that you are about to do and really encourage yourself to do that.**
    II. **Step 2-Practice memorising a deck of cards.**
    III. **Step 3-Learn a song or poem by hard.**
    IV. **Step 4-Commit a list of words in a foreign language to memory.**
    V. **Step 5- Memorize the order of a stack of books.**

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Stage 12: Understand About Focus and Hard Focus.

1. **Rule 1-Focus — the ability to concentrate all your limited talents on whatever's critical at the moment. Without that you can't accomplish anything of value.**
2. **Rule 2-Fortunately [sustaining focus for a long period of time] can be acquired and sharpened through training. His suggestion is to "sit down every day at your desk and train yourself to focus on one point." To Marukami, training to write for four to five hours each morning was no different than training for the marathon that he's run every year for the past two decades. To me, this student is like Murakami's untrained novelist. School work, like any work that requires demanding thinking, is tiring. After a grace period of maybe 20 – 30 minutes, your mind starts to disengage. In the red book, I compare the sensation to a weight descending inside your skull. Your energy fades and you begin to experience a desperate craving for novel stimulation. Nothing in the world seems more tempting than to go seek such stimulation — to check your e-mail, or sift through your Facebook feed like a hyper-extroverted gold prospector.**
3. **Rule 3-To succeed as a student (or a novelist) you have to fight that feeling and keep working. I call this ability *hard focus*. Fortunately, as Marukami explained, this deficiency can be remedied in the same way that a runner builds his endurance: you have to try to push yourself, each day, a little farther than is comfortable. Over time, your threshold raises. Systematically increased the amount of time I would force myself to work continuously without a break to seek unrelated stimulation. This culminated in my current schedule in which I write for 2 – 3 hours, take a break for lunch, e-mail, and exercise, and then work on my thesis for 2 – 3 hours, before finishing for the day.**

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Stage 13: Being Focus and Doing Deep Work.

1. **Rule 0- Use Steps in Choosing Topic and Learning From Rules of Reading**
    I. **Step 1: Part 2: Steps In Choosing Topic, Skimming The Books, Articles Debate, Discussion For Deep Work Or Deep Study Or Bible Study.**
        A. **Step 5-How To Become Polymath. Page 24.**
        B. **Step 6-Choose The Topic. Pages 25-34.**
        C. **Step 7-Three Questions to Ask Yourself Before Saying YES to a New Commitment. Pages 35.**
        D. **Step 8-What Tools I Will Use For Learning? Page 36.**
        E. **Step 9-Narrow Down Subject or Topic. Pages 37-38.**
        F. **Step 10-Information Overload: Why we're facing it and how to handle it. Pages 39-40.**
        G. **Step 11-Compile Resources And Create Curriculum. Page 41.**
        H. **Step 12-Filter Resources. Pages 42.**
        I. **Step 13-Choose A Book, Article, Talk, Discussion, Debate, Speeches, Research, Newspaper, Journal And Give The Reason of The Choice. Pages 43-45.**
        J. **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**
        K. **Step 15- Find Out What Kind of Resource is this? Pages 51-52.**

    II. **Step 2: Part 28: Learning.**
        A. **Step 191-Books For Studies. Pages 2109-2111.**
        B. **Step 192-Classical Education Curriculum. Page 2112-2114**
        C. **Step 193- UltraLearning Pages 2115-2234**
        D. **Step 194- How To Be Straight A Student. Pages 2235-2307.**

2. **Rule 1-Deep Work is ability to focus without distraction on a cognitively demanding task.** You Giving Your full attention. Without Distraction Piece is the most important part, and this means no Context Shifting, No Multitasking. Example When I am reading a book, I am not going to open my Email Box to glance every now and then. This creates new value, improve skills and Hard to Replicate. If there is distraction, this is not deep work, if not hard, then this is not deep work.
    I. No Context Shift At all While Performing Deep Work
    II. No Glancing
    III. No multitasking
    IV. No Distraction

3. **Rule 2- Deep Work Timer**
    I. **Step 1-Have Deep Work Timer. If I get up for Bathroom or Coffee, then the Deep Work Timer is stoped, Once Back, Turn On Timer. Deep Work Hours Only counting, when I actually Do Deep Work.**

4. **Rule 3- Study Time or Deep Work.**
    I. **Step 1-Our bodies follow what are known as ultradian rhythms-ninety-minutes periods at the end of which we reach the limits of our capacity to work at highest level.**

    II. **Step 2- Study Or Deep Work intervals Maximum 45-90 Minutes.**

    III. **Step 3- Take Break 5-10 Minutes To Do:**
        A. **Coffee**
        B. **Walk Around**
        C. **No Phones**
        D. **Do the Training for your legs**
        E. **Do the training for Eyes**

    IV. **Step 4-Big Break 1-2h**
        A. **Take 20 Minutes Nap within 4 Hours, after Triggering Learning, they learn much faster, In other words the brain rewires much faster.**

    V. **Step 5- Spend in Deep Work Between 1-14h a Day.**

5. **Rule 4- Take Notes By Using One Of The Following Methods:**
    I. **Use Cornell Note Taking.**
        A. **Name.**
        B. **Date.**
        C. **Class and Period.**
        D. **Topic.**
        E. **Essential Question at the Top of Page.**
        F. **Questions and Main Ideas on the Left Page of the Blank Page.**
        G. **Notes On the Right Page of the Blank Page.**
        H. **Summary at the bottom of the page.**

    II. **Analytical Learners: Outline/ List. Good Works well for recording terms, definitions, facts and sequences.**

    III. **Sentence Method: The goal is to jot down your thoughts as quickly as possible. Works well in meetings or lectures that lack organization. Use when information is being presented very quickly.**

    IV. **SQ3R (Survey, Question, Read, Recite, Review). Use for dense readings (like business books, text books, whitepapers, etc.). You start the process by skimming the material for bolded text, images, diagrams and summaries in order to produce a list of headlines or main topics.**

    V. **Mapping. Mapping is a nonlinear system of note-taking that resembles a tree and root structure. Ideas stem from one major concept and are connected by lines (or "branches"). As a note-taking system, mapping works particularly well for visual learners, but it can also be a great tool for analytical-thinkers who have trouble brainstorming because it allows you to make connections you'd otherwise miss with a linear format. Works well for planning essays, recording meetings. Use for big-picture brainstorming sessions.**

    VI. **Smart Wisdom. It's a tool optimised for active listening in lecture situations. Instead of taking notes in full sentences, you record only keywords and place them in a chain that maps the thought process.**

VII. **Diagram And Processes. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

VIII. **Diagram And Processess. Diagrams help visually represent content. However they are not always versatile. A diagram usually serves one purpose best, so selecting the right diagram will make your notes more meaningful.**

IX. **Charting. Charting is a great note-taking strategies when you need to compare and contrast ideas. The most widely used charting method is the Pro and Con list.**

X. **CERC.**
   - **A. Claim**
   - **B. Evidence**
   - **C. Reasoning**
   - **D. Conclusion**

XI. **Use Smart Notes.**
   - **A. What is big Idea.**
   - **B. Question.**
   - **C. Evidence.**
   - **D. Conclusion.**

6. **Rule 5-To “do less” is to slow down. Focus on one activity at a time. Do less total activities. Be willing to pass through occasional interludes of full non-productivity.**

7. **Rule 6- Tools Will Be Used For Focus, Pay Attention and Concentration For Any Deep Work, Studies, Learning, Thinking and Writing.**
   I. **Step 1-Use, Listen, Follow and Apply Every Steps of Feynman Technique. Step 161- Feynman Technique. Pages 2000-2012.**

   II. **Step 2- Use Rules of Reading**
      A. **Skimming:**
         - **Step 14-Intelligently Skimming Through The Book. Pages 46-50.**

      B. **Entertainment**
         - **Method 1-Speed Reading. Pages 58-63.**

      C. **Methods for Basic Knowledge For Deep Work or Bible Study.**
         - **Method 1-Survey, Question, Read, Recite, Record, Reflect (SQR4). Pages 65-66.**
         - **Method 2-Use 80/20 Principle For Reading. Pages 67.**
         - **Method 3-Preview, Question, Read, Summary,Test (PQRST). Page 68.**
         - **Method 4-Flip Through Pages and Analyse. Page 69.**
         - **Method 5-Devotional Bible Study by Using Devotional Books. Pages 70-71.**
         - **Method 6-Devotional Bible Read. Pages 72-73.**

D. Deep Work, Deep Study, Bible Study or Any Book- SLOW Reading- Complex Text.

- **Method 1-Chapter Summary Method. Pages 142-146.**
- **Method 2-Character Quality Method. Pages 147-159.**
- **Method 3-Thematic Method. Pages 160-162.**
- **Method 4-Biographical Method. Pages 163-175.**
- **Method 5-Topical Method. Pages 176-179.**
- **Method 6-Word Study Method. Pages 180-188.**
- **Method 7-Book Background Method. Pages 189-193.**
- **Method 8-Book Survey Method. Pages 194-204.**
- **Method 9-Chapter Analysis Method. Pages 205-214.**
- **Method 10-Paragraph Study. Pages 215-228.**
- **Method 11-Verse by Verse Analysis Method. Pages 229-233.**
- **Method 12-Book Synthesis Method. Pages 234-237.**
- **Method 13-Theological Study Method of Bible Study. Pages 238-244.**
- **Method 14-Studying Bible Prophecy. Pages 245-258.**
- **Method 15-Typological Study Method. Pages 259-261.**
- **Method 16- John MacArthur Way Bible Study. Pages 262-267.**
- **Method 17-Inductive Bible Study Method. Pages 268-295.**
- **Method 18-BIBLICAL HERMENEUTICS. Pages 296-301.**
- **Method 19-Theological Group of Principles. Pages 302-305.**
- **Method 20- How To Read A Book Pages 306.**

E. Deep Work, Shallow Work, Bible Study, Analysis of Text, Research, Investigative Journalism, Investigation and Syntopicon, Mixed Method.

- **Method 21- How To Read A Book By Mortimer Adler Various edition Pages 340.**
- **Method 22-How To Read A Book For Various Books. Pages 341-599.**
- **Method 23- Syntopicon Pages 600-641.**
- **Method 24-The Craft of Research. Pages 642-881.**
- **Method 25-Research Books can Be Used. Pages 882-897.**

- **Method 26-Investigative Journalism. Pages 898-923.**
- **Method 27-Mixed Methods of Rules of Reading. Pages 924-943.**

F. **Part 6: Analysis Of Book By Using External Sources.**
  - **Step 40-Aids To Reading, Listening, Conversation, Debate. Pages 944-957.**
  - **Step 41-Commentaries On Book and What Are Other Take on? Pages 958.**
  - **Step 42-Review Of The Book. Pages 959-962.**
  - **Step 43-Analysing Author and Publisher and Audience. Pages 963-966.**
  - **Step 44-How To Spot Bad Science. Pages 967-977.**
  - **Step 45-Content Of Critical Review. Pages 978-979.**
  - **Step 46-The Funding of Book, Author, Publisher, Speaker, Presenter, School, Government, Politician, Companies, Influencer, Newspaper, Journalist or Other Person. Pages 980-1017.**
  - **Step 47-Was There Propaganda and Conspiracy Theories In the Book and Propaganda Analysis. Pages 1017-1022.**
  - **Step 48-What did I take From the Book. Pages 1023-1028.**
  - **Step 49-Implication of The Book. Pages 1029.**
  - **Step 50-My Arguments For Or Against The Author, Writer, Speaker, Debater. Pages 1030-1032.**
  - **Step 51-Improve My Arguments and I would Have Another Chance, how would I Approach. Pages 1033-1034.**
  - **Step 52-Basic Exploration, Experimentation and Practice. Pages 1035.**
  - **Step 54-Simplify The Topic For Myself First. Pages 1052.**
  - **Step 55-Reflect, Refine And Simplify. Pages 1053.**
  - **Step 56-Return to the source material if you get stuck. Go back to whatever you're learning from – a book, lecture notes, Journal, Newspaper, podcast or any other resource and source – and fill the gaps in your knowledge. Pages 1054-1056.**

G. **Part 8: Simplify Explanation and Creating Analogies.**
    - **Step 70-Simplify your explanations and create analogies. Streamline your notes and explanation, further clarifying the topic until it seems obvious. Additionally, think of analogies that feel intuitive. Pages 1311.**

H. **Part 9:Reflect, Refine and Simplify.**
    - **Step 71-Reflect, Refine, and Simplify. Page 1313.**

I. **Part 10:Organise And Review.**
    - **Step 72-Organise And Review. Pages 1315.**

J. **Part 11:Deep Work and Application.**
    - **Step 73- The Focus to Say No. Pages 1317.**
    - **Step 74-Half Life.The Decay of Knowledge and What to Do About It. Pages 1318-1326.**
    - **Step 75-Power of I do not know. Pages 1327.**
    - **Step 76-Application. Pages 1328-1336.**
    - **Step 77-Letting The World Do The Work For You. Pages 1337-1342.**

III. **Step 3- Do And Practice Thinking, Logic and Mental Model For Deep Work, Studying, Learning and Personal Growth.**

A. **Part 7: Thinking, Logic and Mental Model For Deep Work or Deep Study, Or Bible Study**
    - **Step 57- Slow Down. Pages 1058-1060.**
    - **Step 58- NOT MULTITASK. Pages 1061.**
    - **Step 59-You Have Required To Do The Work For Thinking and Applying Mental Tool Models. Pages 1062-1077.**
    - **Step 60-Why Critical Thinking, Logic, Thinking and Mental Tools Are Important? Pages 1078-1080.**
    - **Step 61-Intradisciplinary Thinking. Pages 1081-1122.**
    - **Step 62-Multidisciplinary Thinking. Pages 1123-1165.**
    - **Step 63-CrossDisciplinary Thinking. Pages 1166-1208.**

- **Step 64-Interdisciplinary Thinking. Pages 1209-1251.**
- **Step 65-Transdisciplinary Thinking. Pages 1252-1295.**
- **Step 66-Journaling. Pages 1296.**
- **Step 67-Letting The World Do The Work For You. Pages 1297-1302.**
- **Step 68-Journaling. Pages 1303.**
- **Step 69-Letting The World Do The Work For You. Pages 1304-1309.**

IV. Step 4- Do Decision Making For Deep Work, Studying, Learning and Personal Growth.

A. Part 12: Deep Work and Decision Making.

- **Step 78- Slow Down. Pages 1344-1346.**
- **Step 79-NOT MULTITASK. Pages 1347.**
- **Step 80-You Have Required To Do The Work For Decision Making. Pages 1348-1363.**
- **Step 81- Use Rules of Reading for Decision Making 1364-1365.**
- **Step 82-Decision Making Books. Pages 1366.**
- **Step 83-Decision Making. Pages 1367-1404.**
- **Step 84- Thinking, Logic and Mental Model. Pages 1405.**
- **Step 85-Letting The World Do The Work For You. Pages 1406-1411.**
- **Step 86-Journaling. Pages 1412.**
- **Step 87-Letting The World Do The Work For You. Pages 1413-1418.**

V. **Step 5- Communication For Deep Work, Studying, Learning and Personal Growth.**

A. **Part 13:Deep Work and Communication.**

- **Step 88- Slow Down. Pages 1420-1422.**
- **Step 89-NOT MULTITASK. Pages 1423.**
- **Step 90-You Have Required To Do The Work For Communication. Pages 1424-1439.**
- **Step 91- Use Rules of Reading For Communication. Pages 1440-1441.**
- **Step 92-Communication Books. Pages 1442-1445.**
- **Step 93- Thinking, Logic and Mental Model. Pages 1446.**
- **Step 94-Letting The World Do The Work For You. Pages 1447-1452.**

VI. Step 6-Strategy and Tactics.

A. Part 16:Deep Work, Shallow Work, Strategy and Tactics.

- **Step 111- Slow Down. Page 1596-1598.**
- **Step 112-NOT MULTITASK. Pages 1599.**
- **Step 113-You Have Required To Do The Work For Strategy and Tactics. Pages 1600-1615.**
- **Step 114- Use Rules of Reading to Analyse The Topic For Strategy and Tactics. Pages 1616-1617.**
- **Step 115-Strategy and Tactic Books. Pages 1618-1619.**
- **Step 116-A Primer on Strategy. Pages 1620-1625.**
- **Step 117-Strategy vs. Tactics: Why the Difference Matters. Pages 1626-1629.**
- **Step 118-Thinking, Logic and Mental Model. Pages 1630.**
- **Step 119- Tiny Gains. Massive Results. Pages 1631-1632.**
- **Step 120-Letting The World Do The Work For You. Pages 1633-1638.**

VII. Step 7 WRITING

A. Part 15:Deep Work and Writing.

- **Step 103- Slow Down. Page 1488-1490.**
- **Step 104-NOT MULTITASK. Pages 1491.**
- **Step 105-You Have Required To Do The Work For Writing. Pages 1492-1507.**
- **Step 106- Use Rules of Reading to Analyse The Topic For Writing. Pages 1508-1509.**
- **Step 107-Writing Books. Pages 1510-1514.**
- **Step 108- How To Become Straight A Student. Pages 1515-1587.**
- **Step 109- Thinking, Logic and Mental Model. Pages 1588.**
- **Step 110-Letting The World Do The Work For You. Pages 1589-1594.**

VIII.Step 8- Performance.

A. Part 20:Deep Work and Performance.

- **Step 148-Performance Books. Pages 1947.**
- **Step 149- Tiny Gains. Massive Results. Pages 1948-1949.**
- **Step 150-The Ultimate Deliberate Practice Guide: How to Be the Best. Pages 1950-1970.**
- **Step 151-Review, Reflection, Review and Accountability. Pages 1971-1972.**
- **Step 152-Improvement. Pages 1973**
- **Step 153- Feedback System In Place. Pages 1973.**
- **Step 154-Repeat. Pages 1974.**
- **Step 155-Letting The World Do The Work For You. Pages 1975-1980.**
- **Step 156- Spend 5k-10k Hours On subject to Become Expert. Pages 1981.**

IX. Step 9- Review, Journaling and Visualisation

A. Part 25: Journaling and Review of *6* Month And Month.

- **Step 171-Materials Needed and Listen And Follow Rules of Reading For Journaling and Review of *6* Month And Month. Pages 2071.**
- **Step 172-Reflect. Pages 2072.**
- **Step 173-Analyse Strength and Weaknesses. Pages 2073.**
- **Step 174- Analyse Threats and Opportunities. Pages 2073.**
- **Step 175- Improvement. Pages 2073.**
- **Step 176- Steps to Take To Do Better and Improve. Pages 2074.**
- **Step 177- Ideas and Gratitude. Pages 2074.**

B. Part 26: Journaling and Review of Week.

- **Step 178-Materials Needed and Listen And Follow Rules of Reading For Journaling and Review of The Week. Pages 2076.**
- **Step 179-Reflect. Pages 2077.**
- **Step 180-Analyse Strength and Weaknesses. Pages 2078.**
- **Step 181- Analyse Threats and Opportunities. Pages 2078.**
- **Step 182- Improvement. Pages 2078.**
- **Step 183- Steps to Take To Do Better and Improve. Pages 2079.**
- **Step 184- Ideas and Gratitude. Pages 2079.**

X. Step 10- Use Flashcard. Flashcards are an amazing way to learn paired associations between questions and answers.

XI. Step 11- Active Recall. After learning something try to write all that you can remember on a piece of paper. Actively recalling the information WITHOUT ANY HELP. If you are capable of reproducing the information verbally, in your own words without looking at the textbook, you got it.

XII. Step 12- The Question Book Method. Take notes by rephrasing rather than writing done the exact wordings.

XIII. Step 13-Self-generated challenges. Create challenges for yourself to solve later.

XIV. Step 14-Closed-book learning. Limit your ability to look for hints.

XV. Step 15-Don't give up on hard problems easily. The more you push through hard problems, the easier your problem-solving skills get.

XVI. Step 16-Prove things to understand them. Your understanding can be an illusion and the only way to know for sure is to prove your knowledge of things.

XVII. Step 17-Always start with a concrete example. Humans learn mostly by doing so it is important to create concrete examples.

XVIII. Step 18-Don't fool yourself. Ask lots of questions to check your understanding.

XIX. Step 19- Train Memory:

A. **Mom (motivation, observation and Method).**

B. **Linking words to Images (Visualisation).**

C. **Linking new information to old information (Association).**

D. **Add emotion.**

E. **Creating a story to link sequence of words.**

F. **Use LOCI story method. The loci story method is basically the story method with one additional feature: Your story involves you going through different parts of a setting (such as a house), and each setting has one object that represents something in the list your trying to memorize. The benefit of this method is that you don't have to come up with a new story every time. You just use the same story, except you change the items in each setting. For example, you can imagine a big mansion with 10 rooms, and during the story you walk through all 10 rooms. In each room you find a different object, which you can change to suit the list you're trying to memorise. Again, you have to make the story vibrant by using visualisation, association, and emotion.**

8. **Rule 6- In the Exam**
    I. **Step 1- Use How To Be Straight A Student.**
        A. **Step 194- How To Be Straight A Student. Pages 2223-2295.**

    II. **Step 2 Plan-What you will write before writing anything down. It is extremely important to review the entire exam and skimming through all the questions. This will allow your brain to think about the topics and you'll have a better understanding of the overall difficulty and length of the exam. The next thing that you need to do is to formulate a rough schedule for answering the questions. If you are pressured by time, you should keep a few minutes as a safety buffer and distribute the remaining time as needed among the questions. By doing this, you ensure that you have enough time to go through the entire exam and that you won't get too absorbed by a single difficult question.**

    III. **Step 3- Proceeding- Starting with the questions you can answer easily. The proceeding to answer the more difficult questions.**

    IV. **Step 4- Proofreading- leaving yourself time at the end to go over everything. Check all the answers and fix any typos and double check your grammar. If you have spare time, you can check whether or not you might be able to improve any of your answers.**

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Stage 14:Post Deep Work.

Stage 5: Rules and Step To Take After Deep Work is Done.

1. **Rule 1- Set Time For F amily and Family Stuff.**
2. **Rule 2- Set Time for Bible Read or Listen and Prayer.**
3. **Rule 3- Set Time For Meditation.**

4. **Rule 4- High Quality Leisure During Downtime. The Reason Prioritise Downtime?**
    I. **Downtime Improves Our Thinking - Have you ever hit a roadblock in your work and ended the day in frustration, only to come back the next day with a perfectly formed solution? This is the power of the pause. Allowing your mind to rest lets you work through complex challenges with greater clarity than if you powered on empty. As Newport notes, "Providing your conscious brain time to rest enables your unconscious mind to take a shift sorting through your most complex professional challenges."**
    II. **Downtime Replenishes Our Ability to Practice Deep Work - Deep Work makes the case that "you can restore your ability to direct your attention if you give this activity a rest." After work, don't direct your attention to high-priority tasks. Instead, give your mind uninterrupted rest through activities like gathering with friends or family, cooking, or walking in nature. Adversely, sneaking in extra emails or group chat conversations does not allow for true rest.**
    III. **Our Ability for Deep Work is Finite - Unfortunately, as valuable as deep work is, it can't be done in unlimited quantity. Newport suggests the upper limit for deep work per day is four hours. Beyond this, our ability to direct focused attention diminishes. Given this, there is plenty of time in the evening to make room for the downtime that will serve your deep work sessions the following day.**

IV. **List Of Down Time High Leisure Activities:**
    - **Walk.**
    - **Run.**
    - **Cooking.**
    - **Spending Time With Family**
    - **Repair things**
    - **Read.**
    - **Get New Hobby.**

5. **Rule 5-Reviewing, Journaling and Visualisation. Use Rules of Reading to review My Day. If you've had a negative week, make changes to your schedule to cut out factors that led to it.**

6. **Rule 6- Set Time For Auditing Time Spent. Audit how you're spending your work time. Reflect on and tweak your schedule: Newport suggests reviewing the accuracy of your time blocks at the end of each day. This will help you set more accurate goals and expectations in the future. Ask Questions**
    I. **Did I reach My Goal For Number of Hours Spent On Deep Work This Week? Yes or No**
    II. **How Many Items ON My Daily Plan Did I complete?**

7. **Rule 7- Exercise On Daily Basis.**

8. **Rule 8-Eat Right: You required energy for you to last long time, stamina, efficiency.**
    I. **Use Keto Diet.**
    II. **Check The Food and The Minerals I need to intake.**
    III. **Do Intermittent Fasting. Between 18/6 to 23/1**

9. **Rule 9-Sleep Helps To Learn and Focus: Just like downtime helps your brain process the information you've been absorbing, sleep does that multiplied manyfold. Sleep is essential. We simply cannot overstate the importance of good sleep. The Best Thing that Anyone Can Do for Mental Health, Physical Health and Performance in Athletic or Cognitive Endeavours is to make sure that you are getting enough Quality Sleep, enough of the time for you.**
    I. **Step 1-Avoid viewing bright lights—especially bright overhead lights between 10 pm and 4 am.**
    II. **Step 2-If you wake up in the middle of the night (which, by the way, is normal to do once or so each night) but you can't fall back asleep, consider doing an NSDR protocol when you wake up.**
    III. **Step 3-Expect to feel really alert ~1 hour before your natural bedtime.**
    IV. **Step 4-Keep the room you sleep in cool and dark and layer on blankets that you can remove.**
    V. **Step 5-Drinking alcohol messes up your sleep. As do most sleep medications.**
    VI. **Step 6-Kids (and indeed all of us) have changing sleep needs over time. Adjust accordingly.**

Two Core Abilities for Thriving in the New Economy

1. The ability to quickly master hard things.

2. The ability to produce at an elite level, in terms of both quality and speed.

This ability to learn hard things quickly, of course, isn't just necessary for working well with intelligent machines; it also plays a key role in the attempt to become a superstar in just about any field—even those that have little to do with technology. To become a world-class yoga instructor, for example, requires that you master an increasingly complex set of physical skills. To excel in a particular area of medicine, to give another example, requires that you be able to quickly master the latest research on relevant procedures. To summarize these observations more succinctly: If you can't learn, you can't thrive. Now consider the second core ability from the list shown earlier: producing at an elite level. If you want to become a superstar, mastering the relevant skills is necessary, but not sufficient. You must then transform that latent potential into tangible results that people value. Many developers, for example, can program computers well, but David Hansson, our example superstar from earlier, leveraged this ability to produce Ruby on Rails, the project that made his reputation. Ruby on Rails required Hansson to push his current skills to their limit and produce unambiguously valuable and concrete results. book: The two core abilities just described depend on your ability to perform deep work. If you haven't mastered this foundational skill, you'll struggle to learn hard things or produce at an elite level